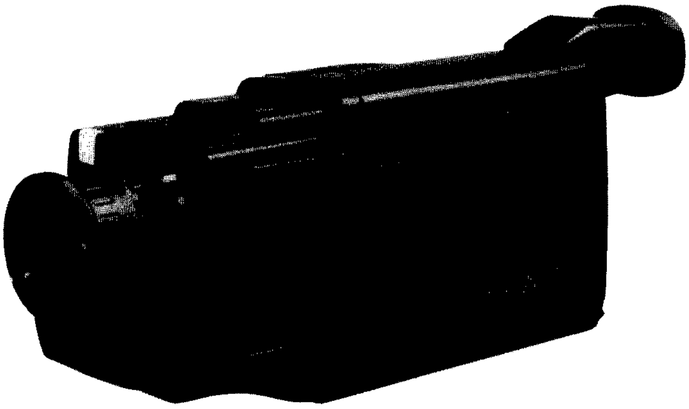
SANYO

Service Manual

8 mm Camcorder

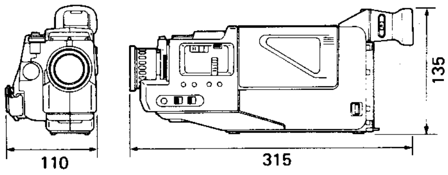
VM-D3P



Specifications

Video recording system	Rotating 2-head helical-scan FM, color under system
Audio recording system	Rotating head FM system
Video signals	PAL color, CCIR standard system
Cassette type	8mm video tape cassette
Tape speed	20.051 mm/sec.
Recording/ playback time	90 minutes (P5-90 cassette)
Fast forward/ rewind time	Approx. 5 minutes (P5-90 cassette)
Pickup element	CCD solid-state type
Viewfinder	Electronic (0.7 inch type, black and white)
Lens	Electro-powered 6X zoom lens f=9 ~ 54 mm F1.6 Close-up function (5 mm ~ 1.1 m) Automatic focus Filter diameter 49 mm
White balance adjustment	Automatic
Minimum subject illumination	7 lux
Subject illumination range	7 lux ~ 100,000 lux
Recommended subject illumination	300 lux or more

Power supply voltage	Battery holder input 6V/7.5V
Power consumption	6.5W during camera recording (including viewfinder)
Operation temperature range	0°C ~ +40°C (32°F ~ 104°F)
Storage temperature range	−20°C ~ +60°C (−4°F ~ +140°F)
External dimensions	110 × 135 × 315 mm (W × H × D)



Weight	Approx. 2.4 lb. (not including battery pack and cassette)
Microphone	Electret condenser type (omnidirectional)
8Pin OUTPUT terminal	Video output 1 Vp-p, 75Ω unbalanced, negative sync Audio output −6 dBs, 2.2 kΩ or less
Microphone jack	Mini jack, −64 dBs For low-impedance microphone

- Specifications and external appearance are subject to change whitout notice.

PRODUCTION CODE No.
126 007 05 (GERMANY)
126 007 12 (SWITZERLAND)
126 007 13 (U.K.)
126 007 14 (SPAIN)
126 007 22 (AUSTRALIA)
126 007 23 (M-EAST)

ER7P/G, SP, E, A, ME, SW

REFERENCE NO. WM-550002

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4. ADJUSTMENT

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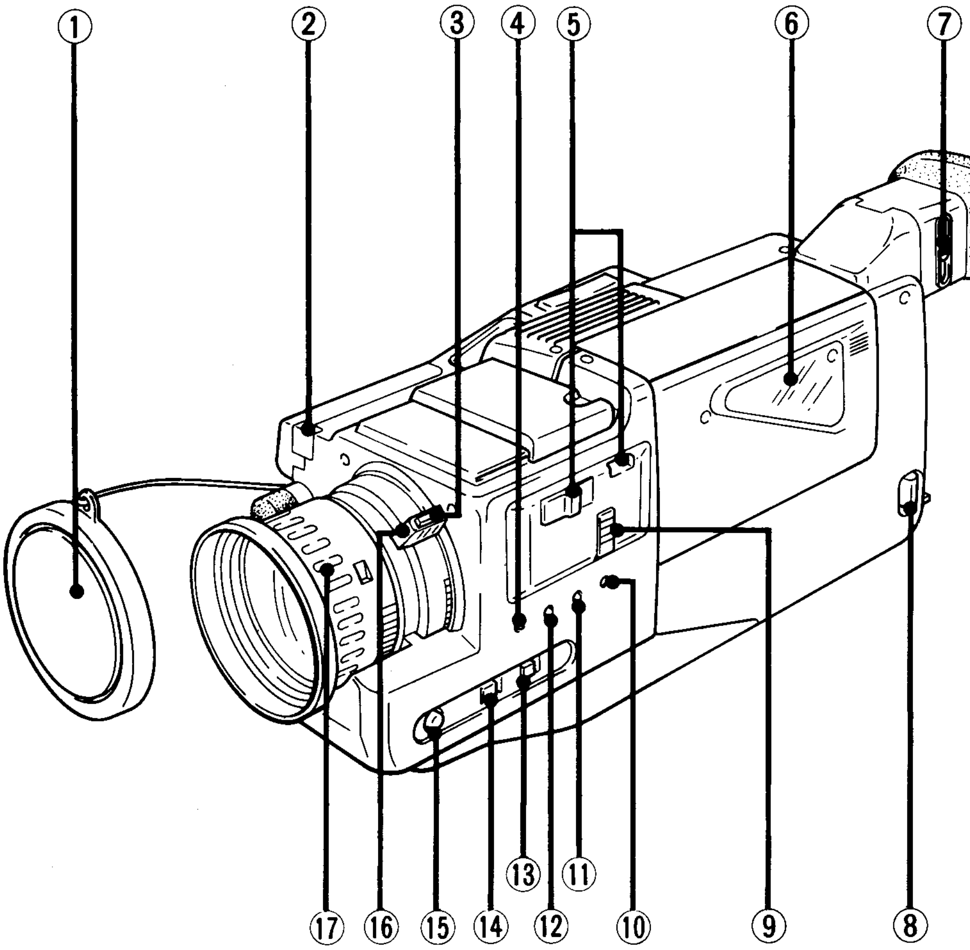
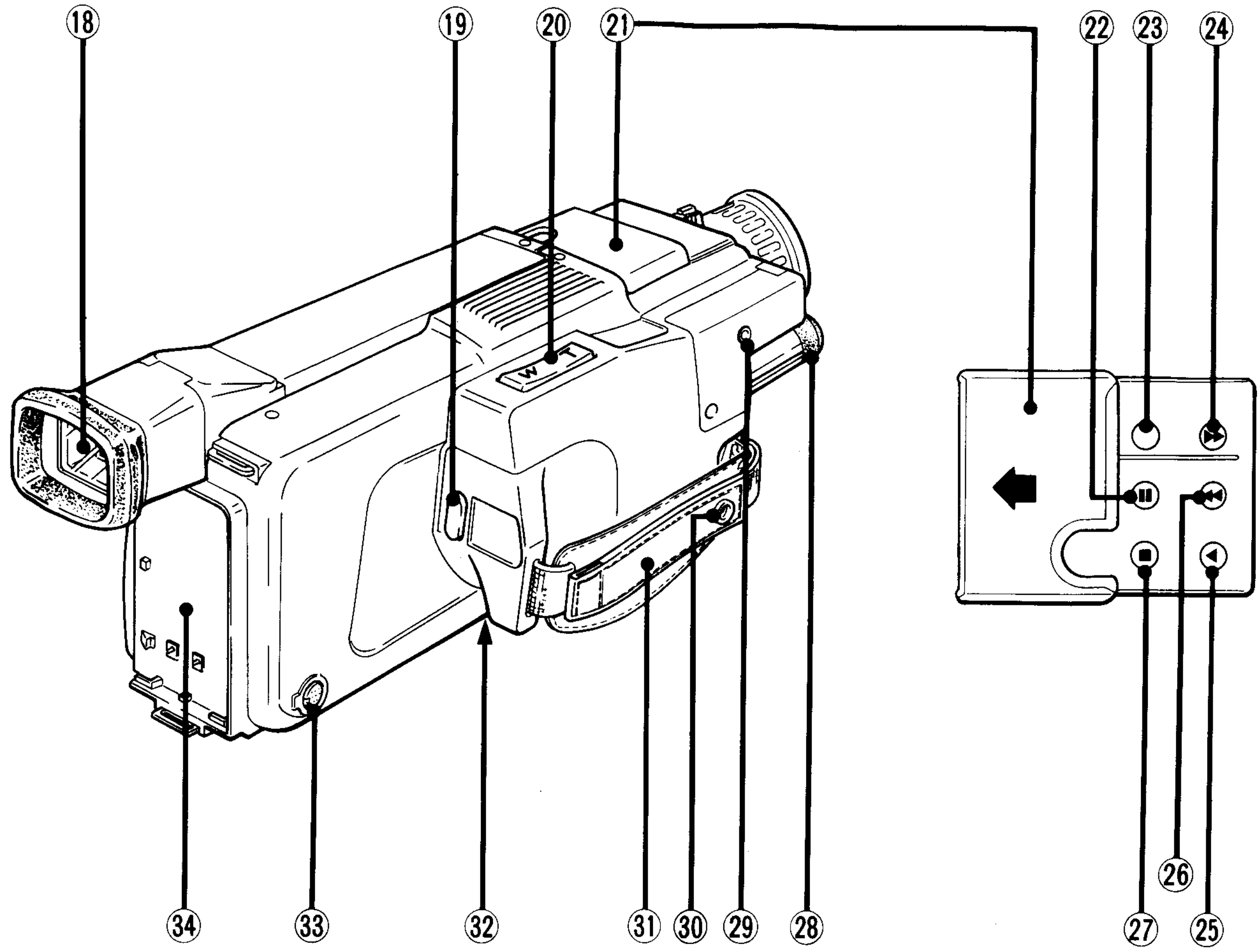
1. PARTS NAME



No.	Name
①	Lens cap
②	WHITE SENSOR
③	MACRO SET button
④	RESET button
⑤	POWER switch and lamp
⑥	Cassette door
⑦	Eyesight compensation lever
⑧	BATTERY EJECT button
⑨	EJECT button

No.	Name
⑩	DATE ADJ button
⑪	DATE ON/OFF button
⑫	MEMORY button
⑬	IRIS switch
⑭	FOCUS switch
⑮	HIGH SPEED SHUTTER button
⑯	Zoom lever
⑰	Focus ring

Note:
- Covering the white sensor ② during recording will result in reduced recording performance.

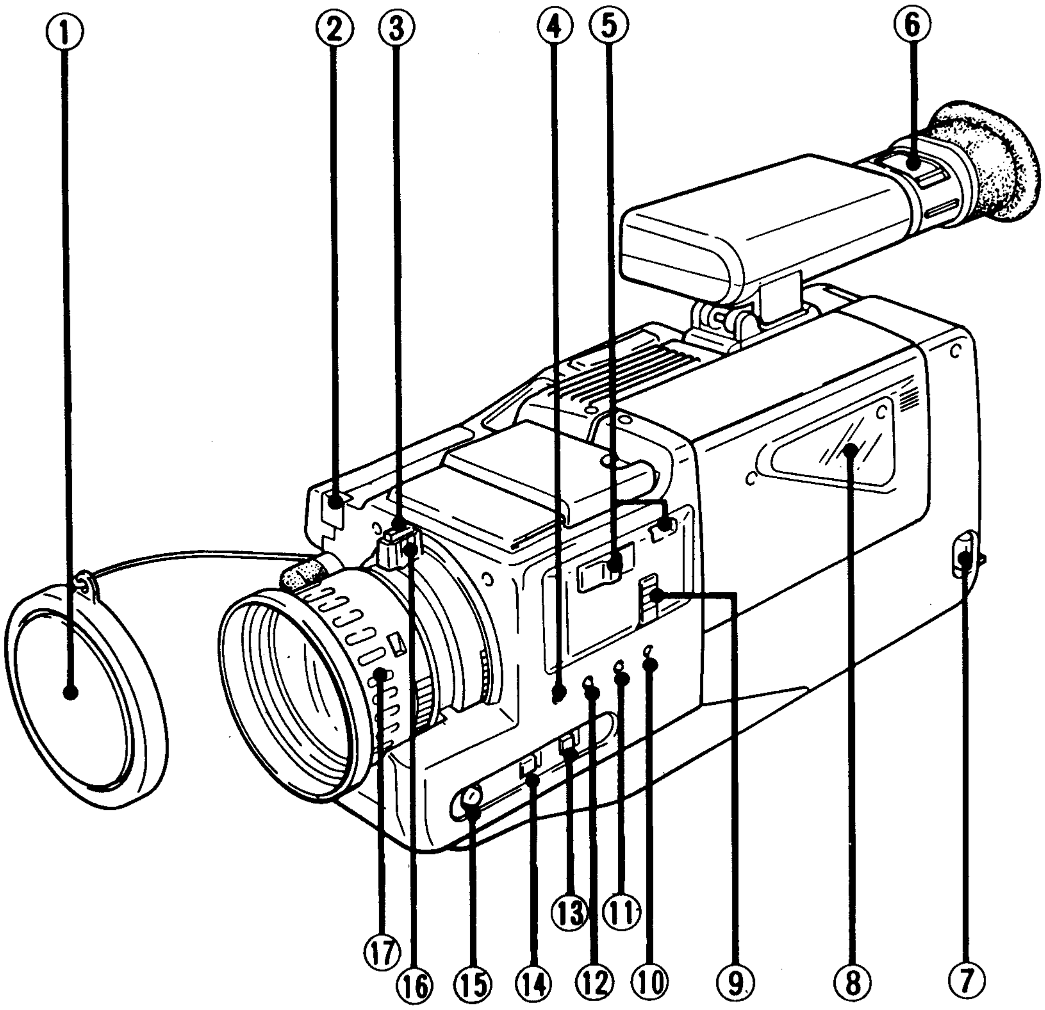


No.	Name
⑱	Viewfinder
⑲	REC START/STOP button
⑳	Power zoom button
㉑	Operation cover
㉒	PAUSE/STILL button
㉓	REC button
㉔	REW button
㉕	PLAY button
㉖	FF button

No.	Name
㉗	STOP button
㉘	Microphone
㉙	EXT.MIC jack
㉚	Lens cap holder
㉛	Grip belt
㉜	Tripod screw mount
㉝	8Pin OUTPUT terminal
㉞	Battery holder

Note:
- The lens cap ① can be conveniently attached to the lens cap holder ㉚ when recording.

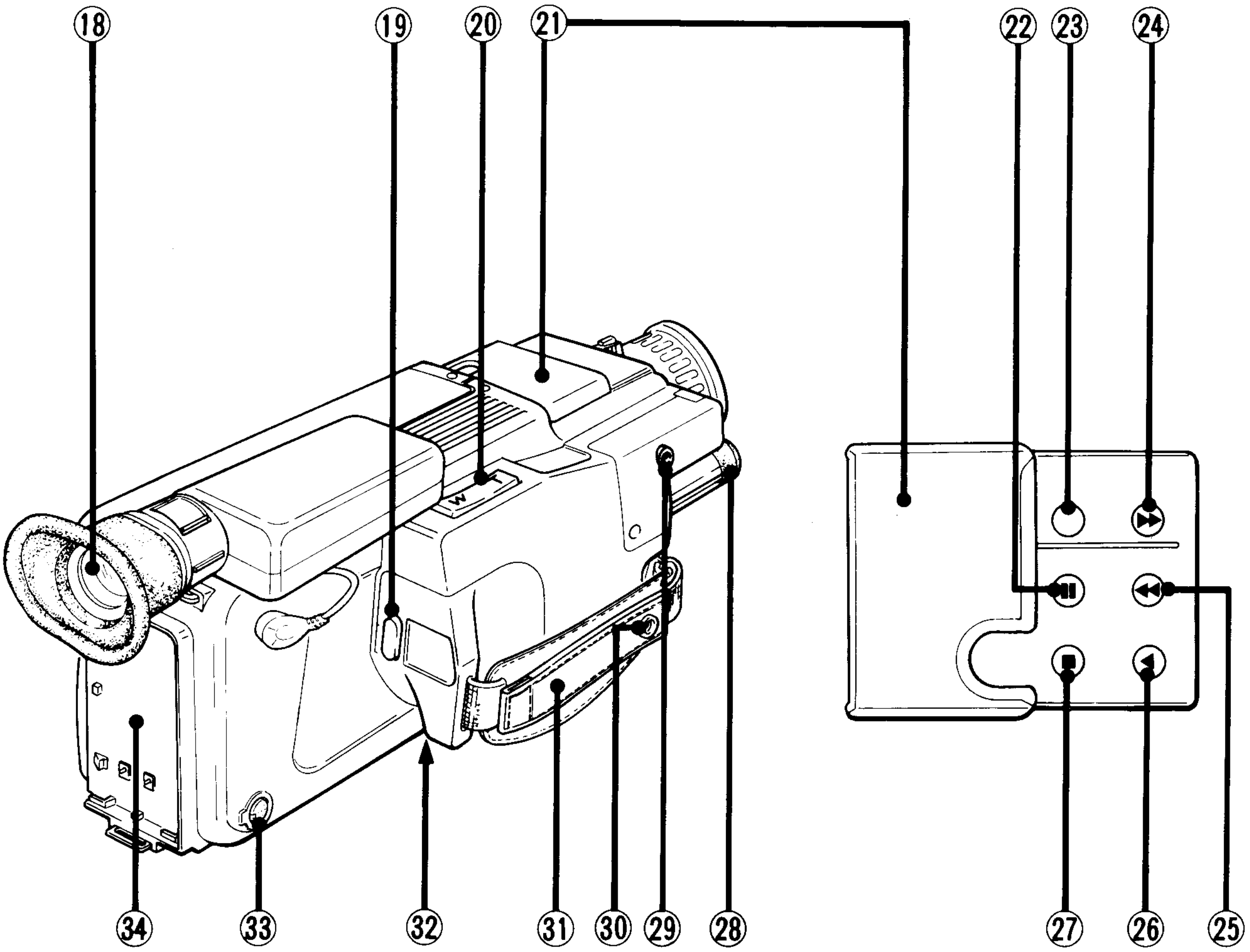
1. PARTS NAME (Only for FVC-P701)



No.	Name
①	Lens cap
②	WHITE SENSOR
③	MACRO SET button
④	RESET button
⑤	POWER switch and lamp
⑥	Eyesight compensation lever
⑦	BATTERY EJECT button
⑧	Cassette holder
⑨	EJECT button

No.	Name
⑩	DATE ADJ button
⑪	DATE ON/OFF button
⑫	MEMORY button
⑬	IRIS switch
⑭	FOCUS switch
⑮	HIGH SPEED SHUTTER button
⑯	Zoom lever
⑰	Focus ring

Note:
- Proper recordings, cannot be made if the white sensor, item2, is blocked or covered.



No.	Name
⑱	Viewfinder (EF-70)
⑲	REC START/STOP button
⑳	Power zoom button
㉑	Operation cover
㉒	PAUSE/STILL button
㉓	REC button
㉔	REW button
㉕	FF button
㉖	PLAY button

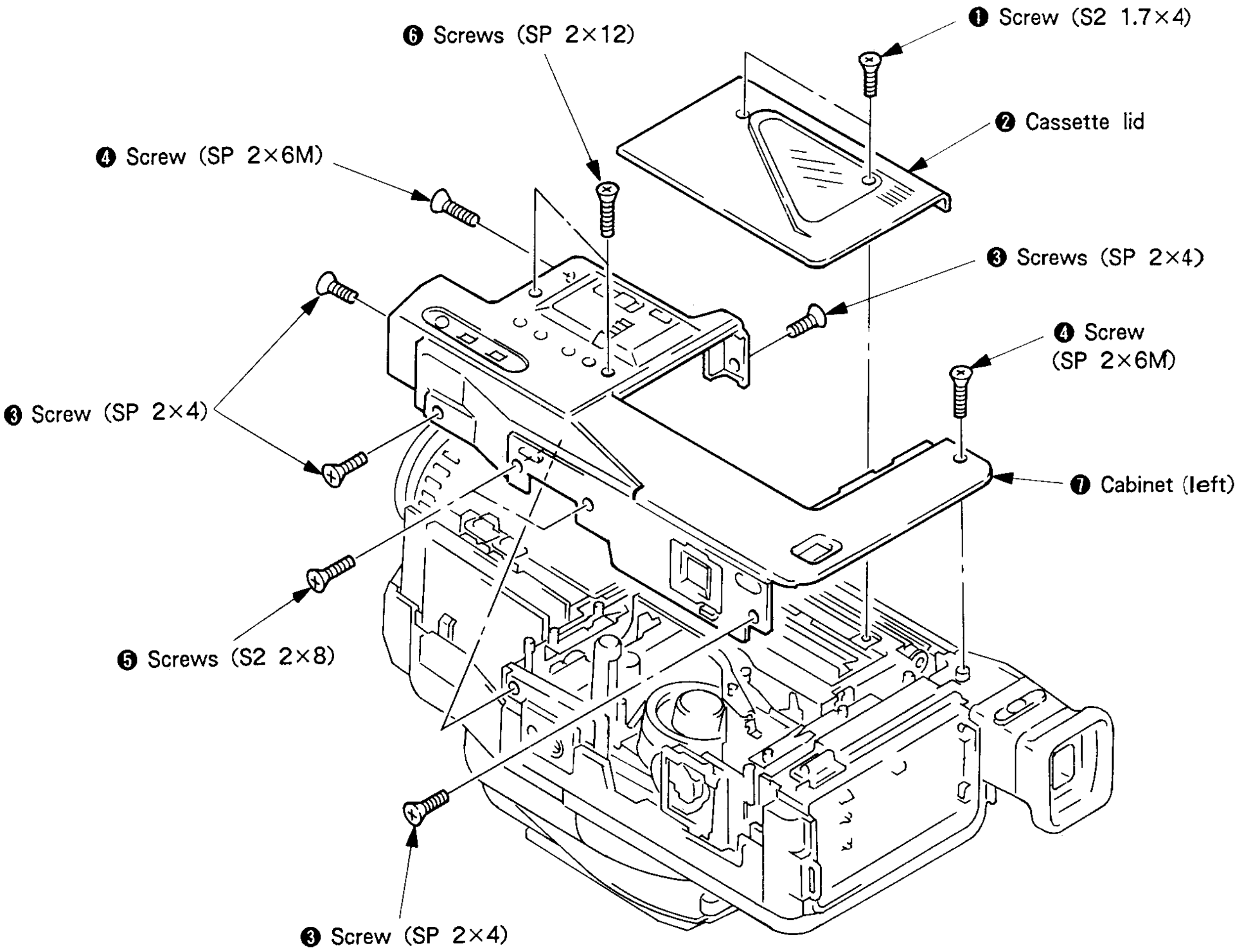
No.	Name
㉗	STOP button
㉘	Microphone
㉙	EXT.MIC jack
㉚	Lens cap stopper
㉛	Grip belt
㉜	Tripod screw mount
㉝	8-pin OUTPUT connector
㉞	Battery holder

Note:
- The lens cap ① can be conveniently attached to the lens cap stopper ㉚ when recording.

2. DISASSEMBLY

2-1. REMOVAL OF THE CASSETTE LID AND CABINET (LEFT)

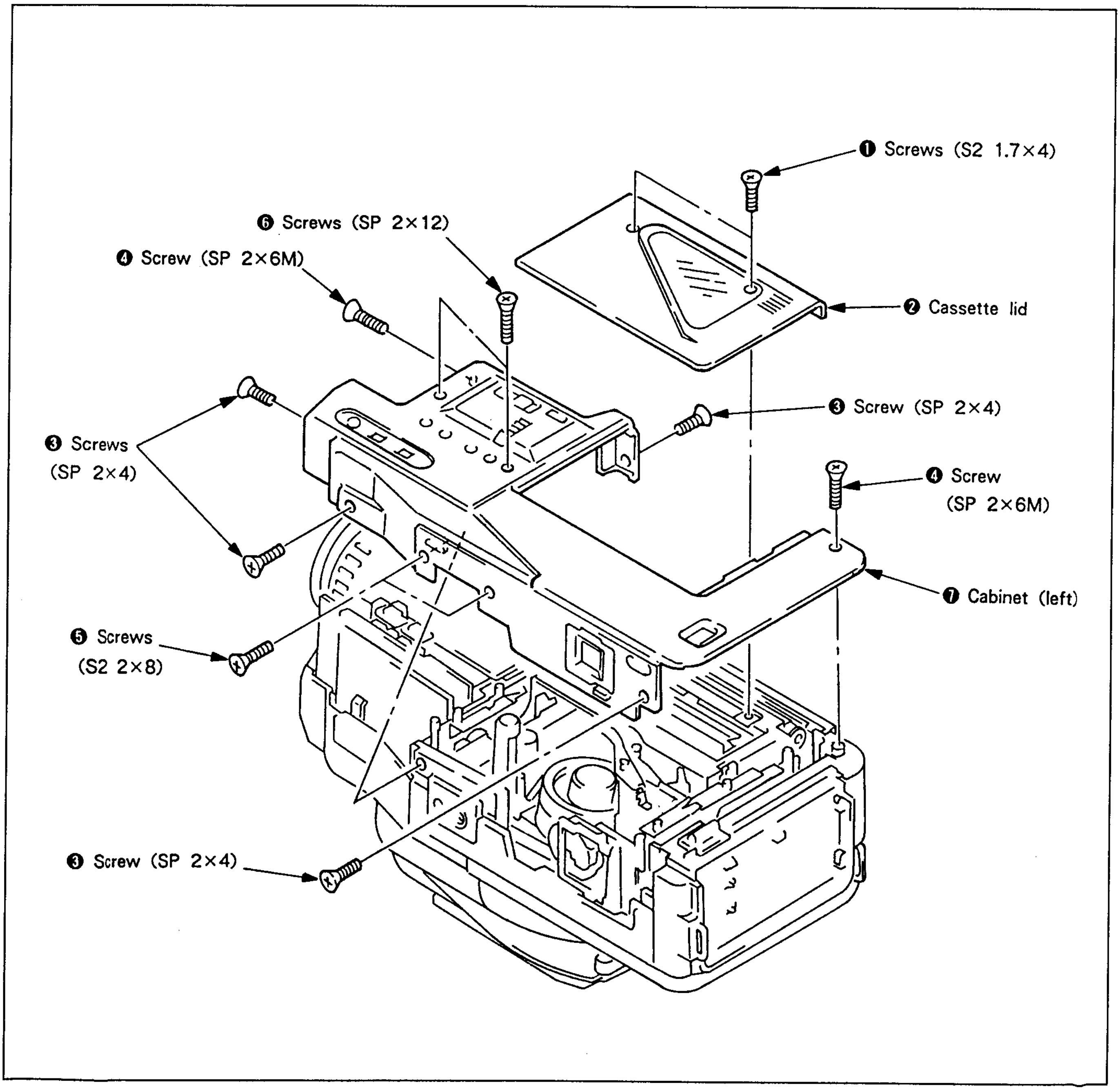
1) Remove the two screws ❶, and remove the cassette lid ❷.
2) Remove the four screws ❸, two screws ❹, two screws ❺, and last two screws ❻.
3) Remove the cabinet (left) ❼.


❻ Screws (SP 2×12)
❶ Screw (S2 1.7×4)
❹ Screw (SP 2×6M)
❷ Cassette lid
❸ Screws (SP 2×4)
❹ Screw (SP 2×6M)
❸ Screw (SP 2×4)
❼ Cabinet (left)
❺ Screws (S2 2×8)
❸ Screw (SP 2×4)

2-1. REMOVAL OF THE CASSETTE LID AND CABINET (LEFT) (Only for FVC-P701)

Note : First remove the viewfinder.
(Refer to instruction manual.)

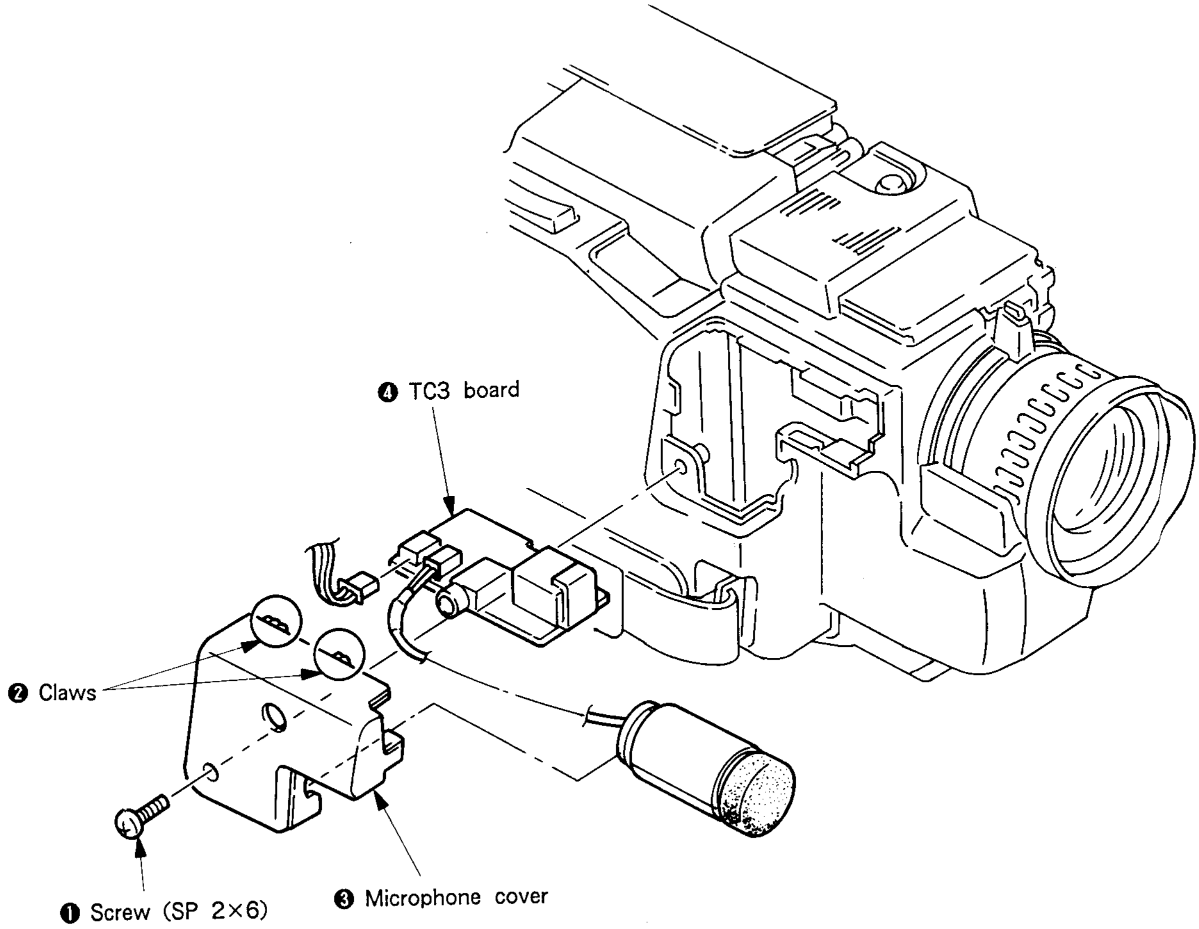
1) Remove the two screws ❶, and remove the cassette lid ❷.
2) Remove the four screws ❸, two screws ❹, two screws ❺, and last two screws ❻.
3) Remove the cabinet (left) ❼.



❶ Screws (S2 1.7×4)
❻ Screws (SP 2×12)
❹ Screw (SP 2×6M)
❷ Cassette lid
❸ Screw (SP 2×4)
❸ Screws (SP 2×4)
❹ Screw (SP 2×6M)
❼ Cabinet (left)
❺ Screws (S2 2×8)
❸ Screw (SP 2×4)

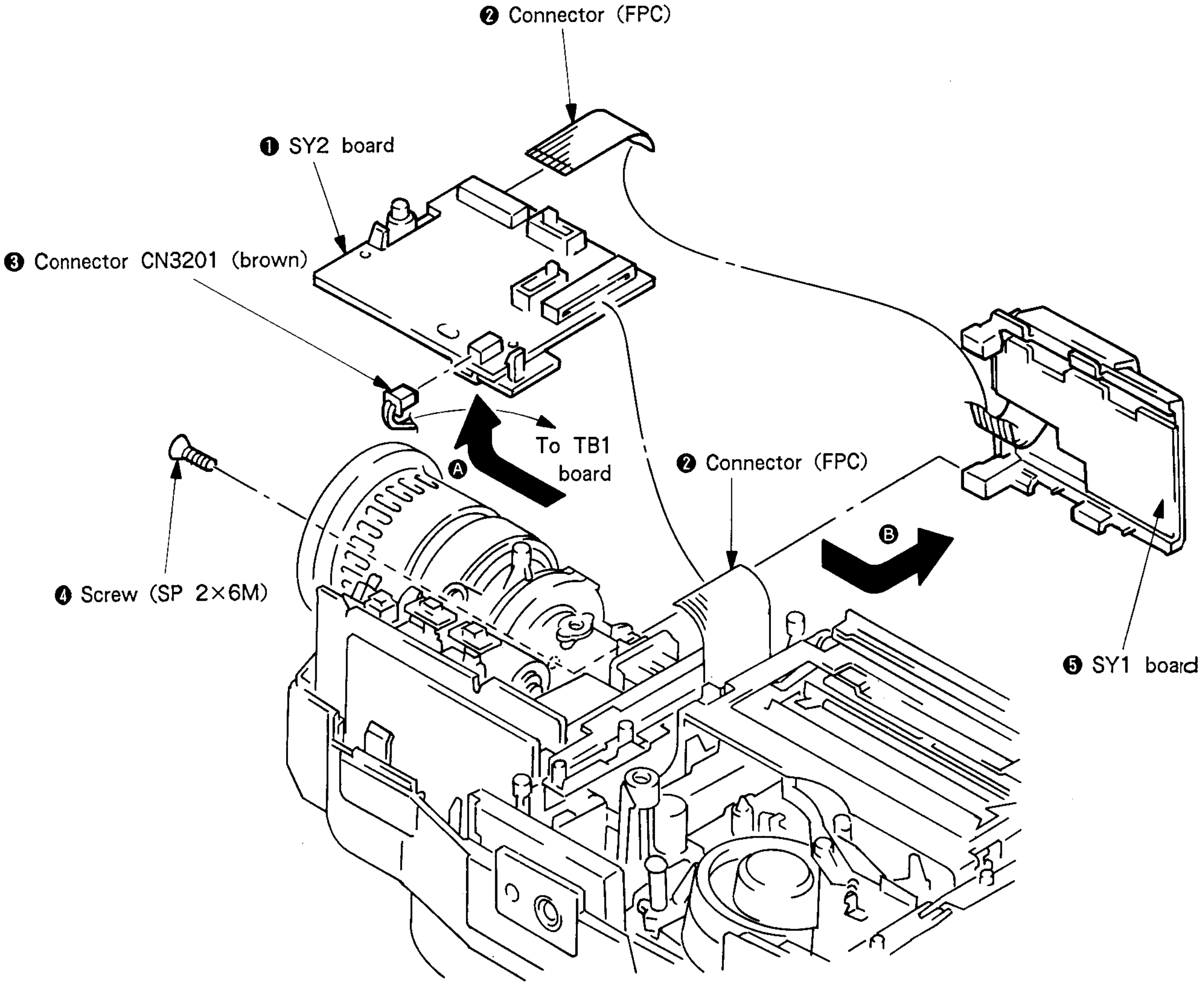
2-2. REMOVAL OF TC3 BOARD

1) Remove the screw ❶.
2) Remove the two claws ❷, and remove the microphone cover ❸.
3) Remove the TC3 board ❹ from the microphone cover ❸.


❹ TC3 board
❷ Claws
❶ Screw (SP 2×6)
❸ Microphone cover

2-3. REMOVAL OF SY1 BOARD AND SY2 BOARD

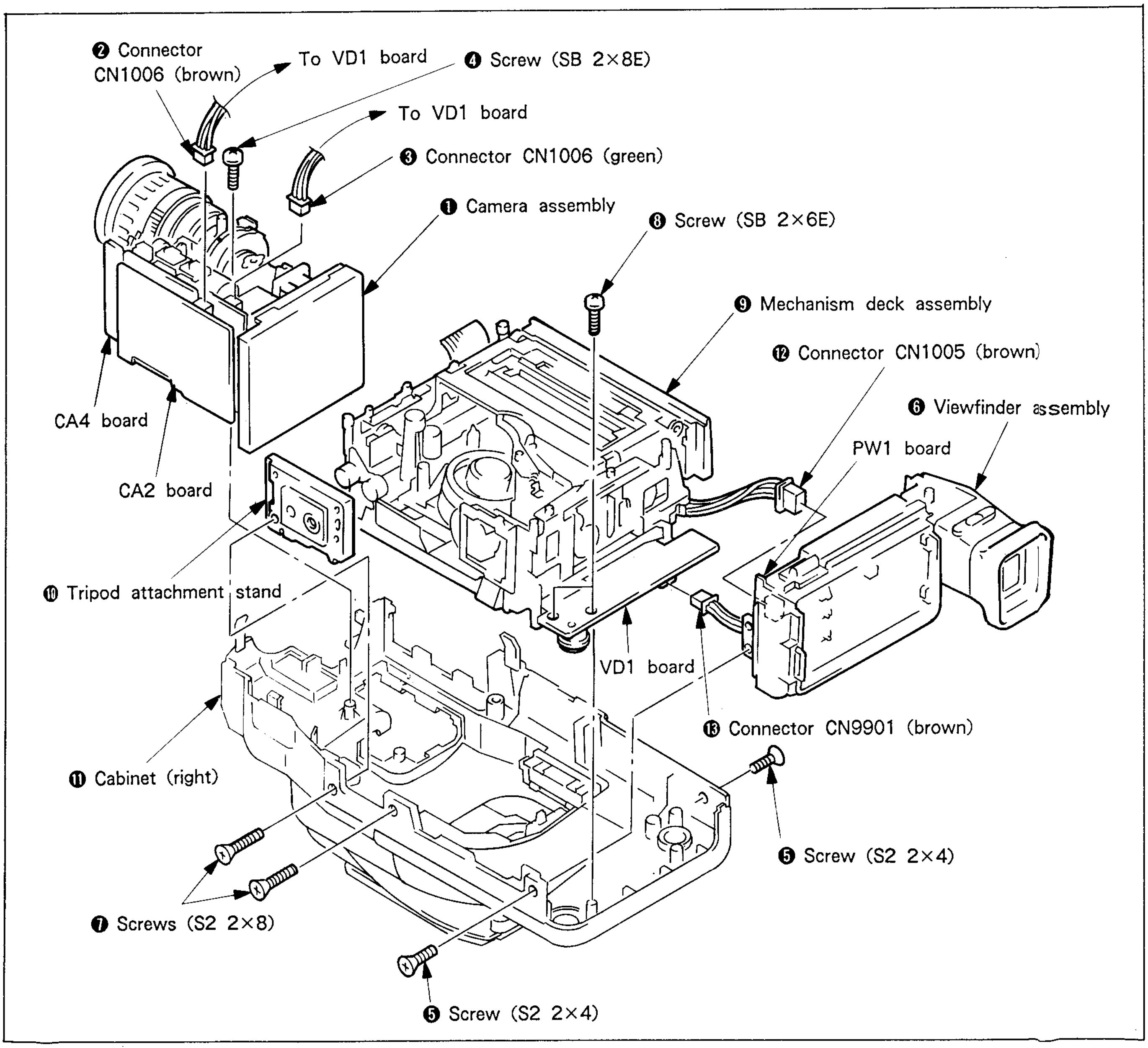
1) Remove the two connectors (FPC) ❷ from the SY2 board ❶.
2) Remove the connector CN3201 (brown) ❸ from the SY2 board ❶.
3) Remove the SY2 board ❶ in the direction of the arrow Ⓐ.
4) Remove the screw ❹.
5) Remove the SY1 board ❺ in the direction of the arrow Ⓑ.


❷ Connector (FPC)
❶ SY2 board
❸ Connector CN3201 (brown)
To TB1 board
Ⓐ
❷ Connector (FPC)
Ⓑ
❹ Screw (SP 2×6M)
❺ SY1 board

2-4. REMOVAL OF CAMERA ASSEMBLY, MECHANISM DECK ASSEMBLY, AND VIEWFINDER ASSEMBLY

1) Remove the CN1006 connector (brown) ❷ and connector CN1006 (green) ❸ from the CA2 board and CA4 board of the camera assembly ❶.
2) Remove the screw ❹ and remove the camera assembly.
3) Remove the two screws ❺ and remove the viewfinder assembly ❻.
4) Remove the two screws ❼ and the other two screws ❽.
5) Remove the mechanism deck assembly ❾ and tripod attachment stand ❿ from the cabinet (right) ⓫.
6) Remove the connector CN1005 (brown) ⓬ from the PW1 board of the viewfinder assembly ❻.
7) Remove the connector CN9901 (brown) ⓭ from the VD1 board of the mechanism deck assembly ❾, and separate the mechanism deck assembly ❾ and viewfinder assembly ❻.

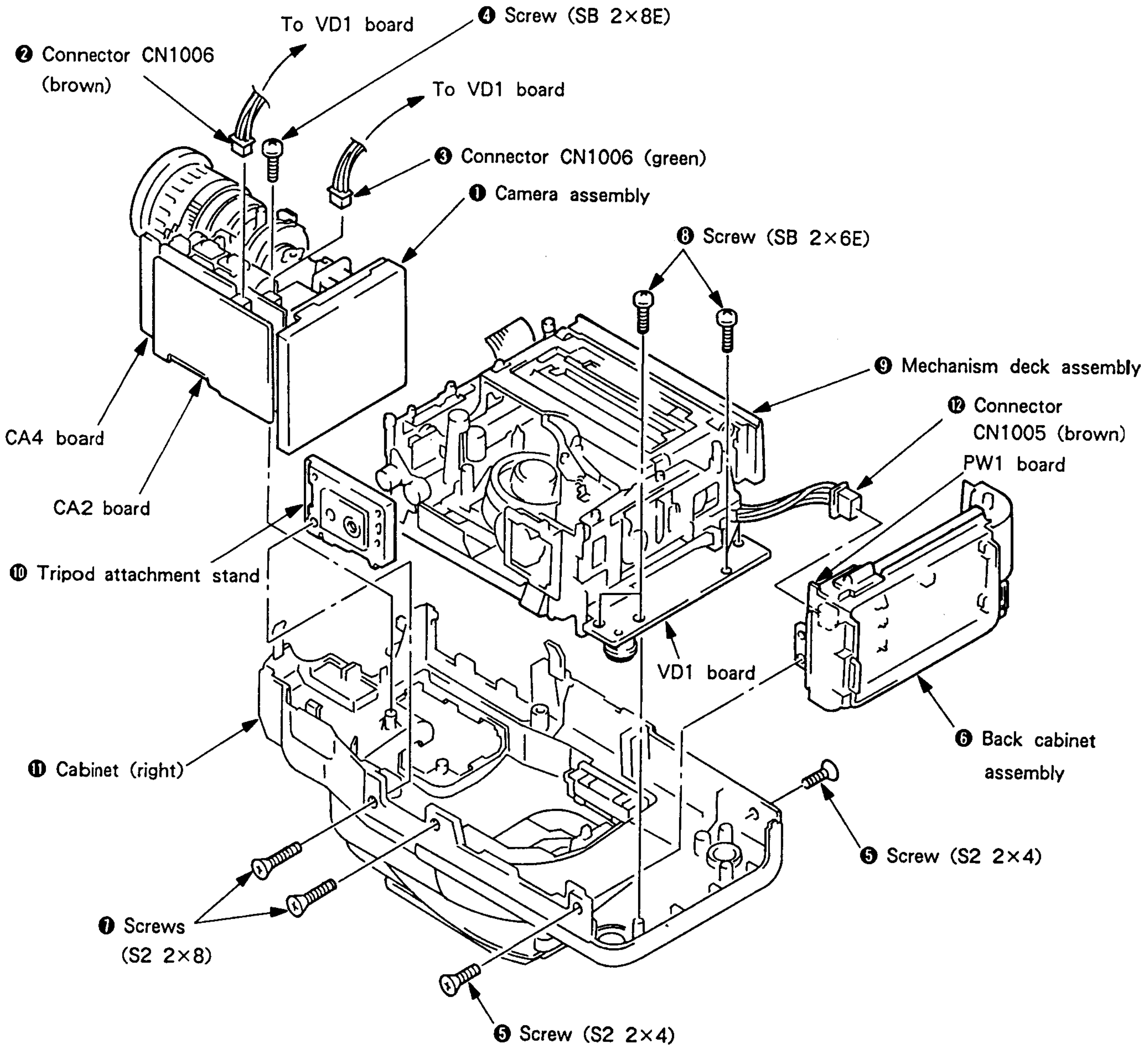
Note : When removing the mechanism deck assembly from the cabinet (right), be sure to remove the viewfinder assembly first. (This is to prevent damage to the VD1 board)


❷ Connector CN1006 (brown)
To VD1 board
❹ Screw (SB 2×8E)
To VD1 board
❸ Connector CN1006 (green)
❶ Camera assembly
❽ Screw (SB 2×6E)
❾ Mechanism deck assembly
⓬ Connector CN1005 (brown)
❻ Viewfinder assembly
PW1 board
CA4 board
CA2 board
❿ Tripod attachment stand
VD1 board
⓭ Connector CN9901 (brown)
⓫ Cabinet (right)
❺ Screw (S2 2×4)
❼ Screws (S2 2×8)
❺ Screw (S2 2×4)

2-4. REMOVAL OF CAMERA ASSEMBLY, MECHANISM DECK ASSEMBLY, AND VIEWFINDER ASSEMBLY (Only for FVC-P701)

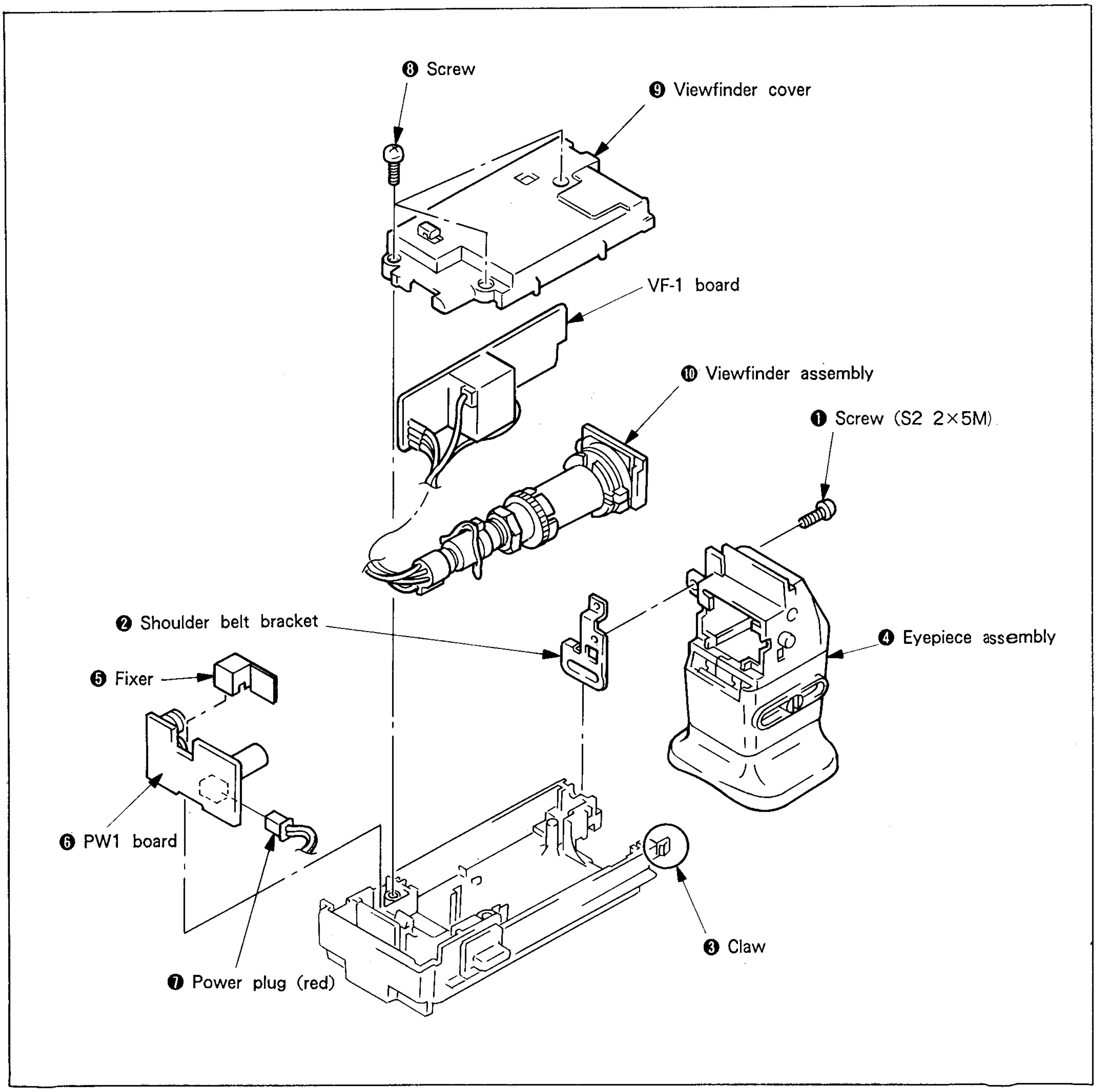
1) Remove the CN1006 connector (brown) ❷ and connector CN1006 (green) ❸ from the CA2 board and CA4 board of the camera assembly ❶.
2) Remove the screw ❹ and remove the camera assembly.
3) Remove the two screws ❺ and remove the back cabinet assembly ❻.
4) Remove the two screws ❼ and the other four screws ❽.
5) Remove the mechanism deck assembly ❾ and tripod attachment stand ❿ from the cabinet (right) ⓫.
6) Remove the connector CN1005 (brown) ⓬ from the PW1 board of the back cabinet assembly ❻ and separate the mechanism deck assembly ❾ and back cabinet assembly ❻.

Note : When removing the mechanism deck assembly from the cabinet (right), be sure to remove the back cabinet assembly first. (This is to prevent damage to the VD1 board)


To VD1 board
❹ Screw (SB 2×8E)
❷ Connector CN1006 (brown)
To VD1 board
❸ Connector CN1006 (green)
❶ Camera assembly
❽ Screw (SB 2×6E)
❾ Mechanism deck assembly
⓬ Connector CN1005 (brown)
PW1 board
CA4 board
CA2 board
❿ Tripod attachment stand
VD1 board
❻ Back cabinet assembly
⓫ Cabinet (right)
❺ Screw (S2 2×4)
❼ Screws (S2 2×8)
❺ Screw (S2 2×4)

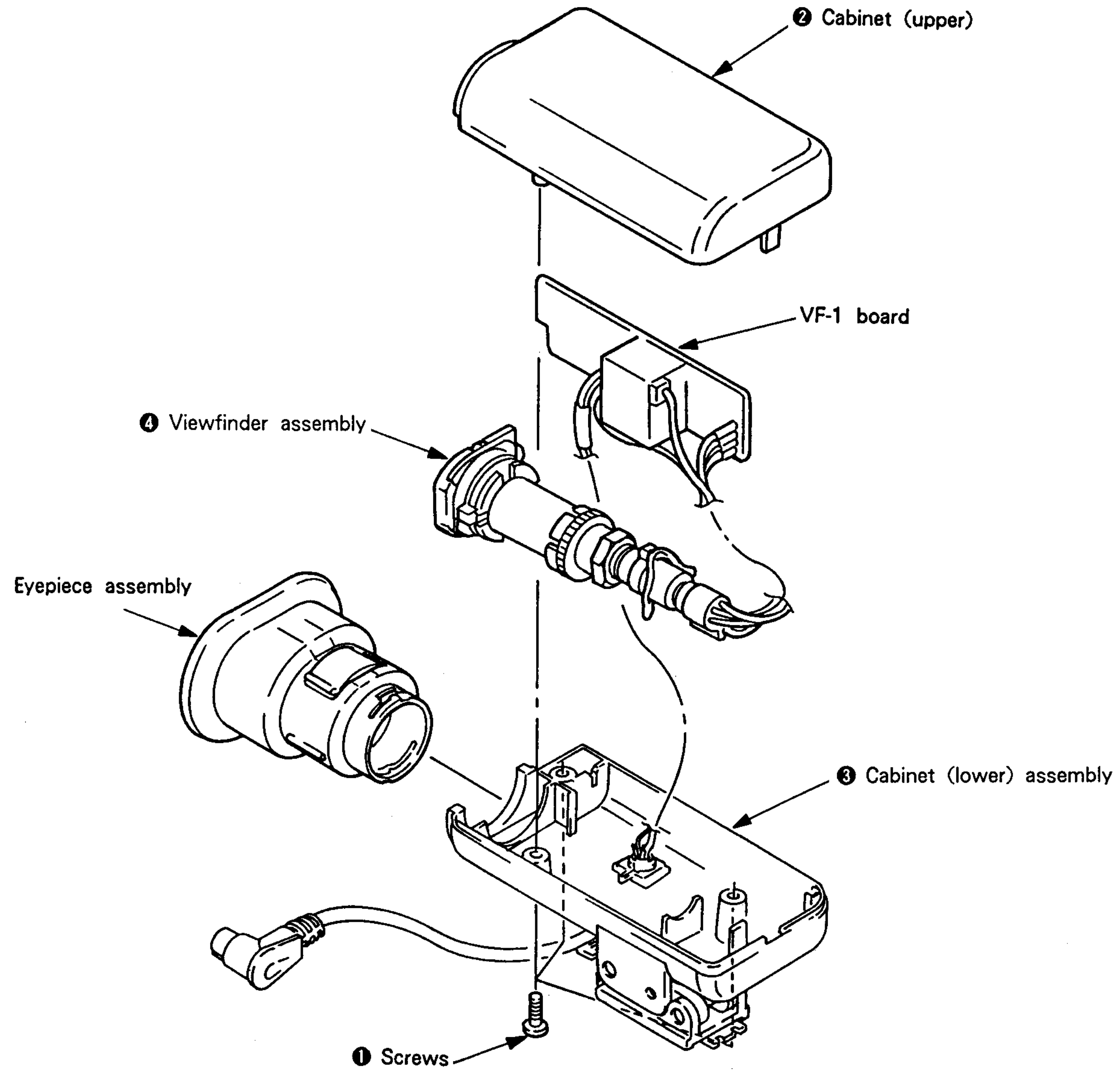
2-5. REMOVAL OF VIEWFINDER ASSEMBLY

1) Remove the screw ❶, and remove the shoulder belt bracket ❷.
2) Remove the claw ❸, and remove the eyepiece ❹.
3) Remove the fixer ❺, and remove the PW1 board ❻, and remove the power plug (red) ❼ on the board.
4) Remove the three screws ❽, and remove the viewfinder cover ❾.
5) Remove the viewfinder assembly ❿.


❽ Screw
❾ Viewfinder cover
VF-1 board
❿ Viewfinder assembly
❶ Screw (S2 2×5M)
❷ Shoulder belt bracket
❹ Eyepiece assembly
❺ Fixer
❻ PW1 board
❸ Claw
❼ Power plug (red)

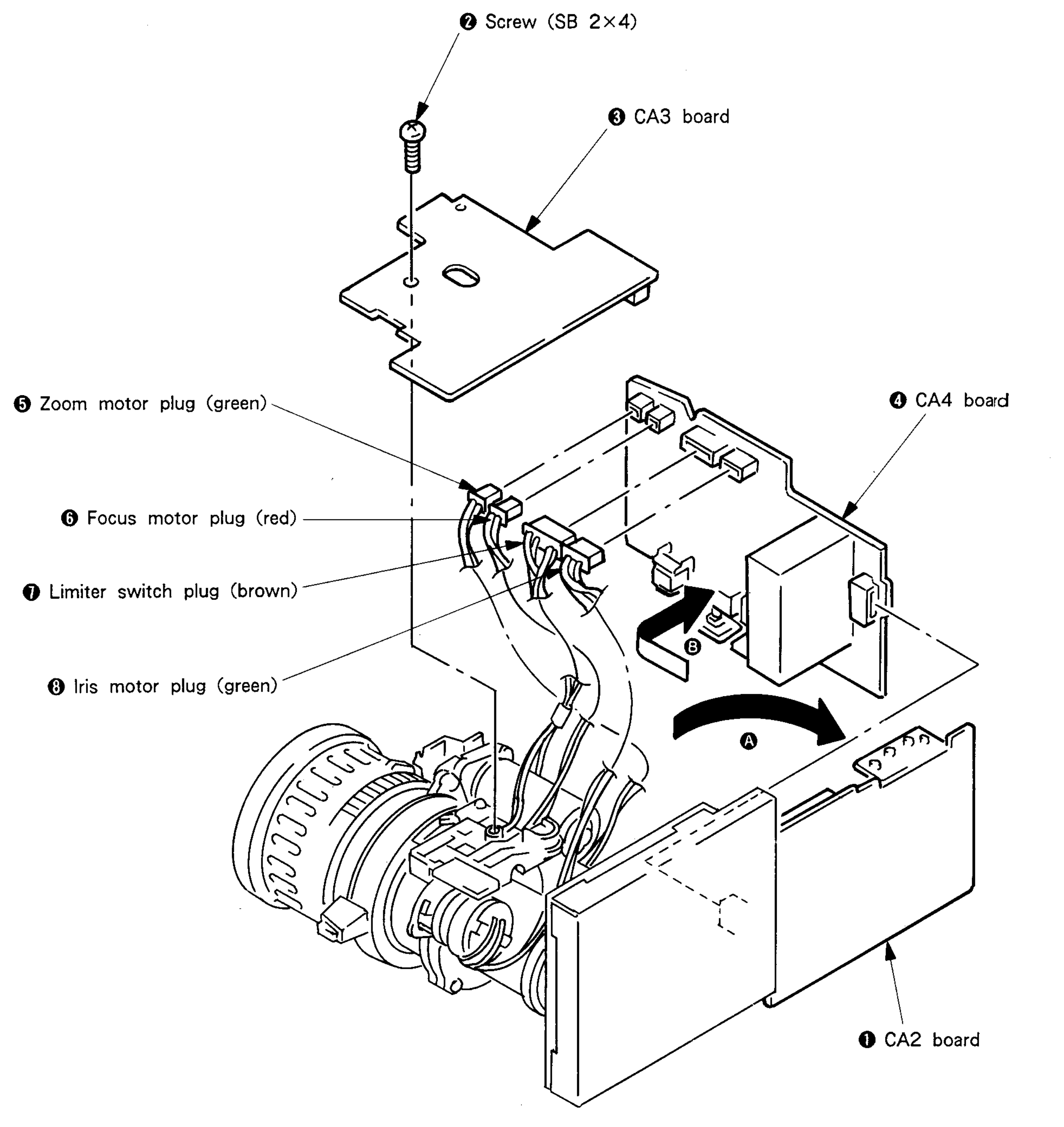
2-5. REMOVAL OF VIEWFINDER ASSEMBLY (Only for FVC-P701)

1) Remove the three screws ❶, and remove the cabinet upper ❷, and cabinet lower ❸.
2) Remove the viewfinder assembly ❹.


❷ Cabinet (upper)
VF-1 board
❹ Viewfinder assembly
Eyepiece assembly
❸ Cabinet (lower) assembly
❶ Screws

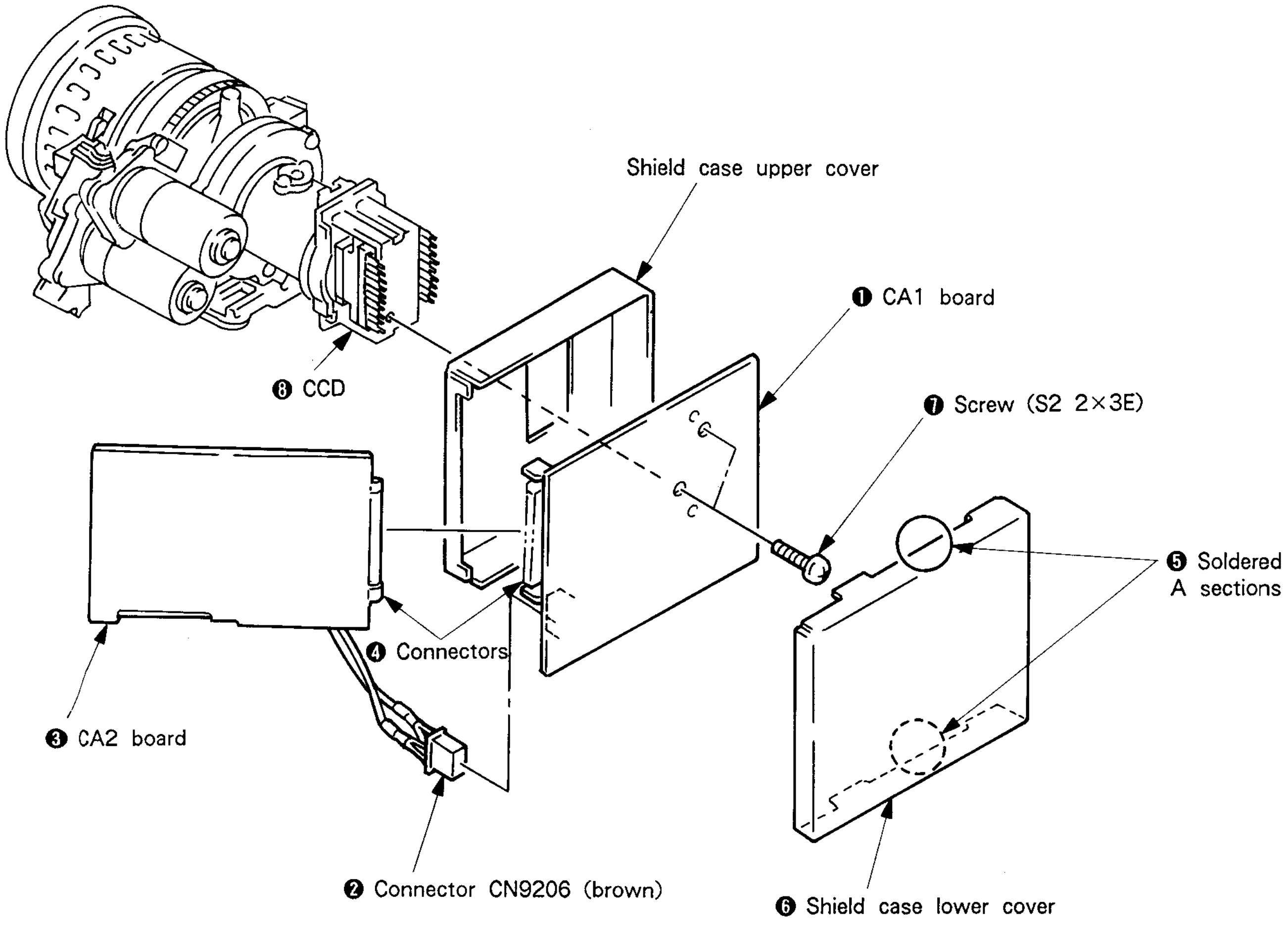
2-6. REMOVAL OF THE CA3 AND CA4 BOARDS

1) Open the CA2 board ❶ in the direction of the arrow Ⓐ.
2) Remove the screw ❷ and remove the CA3 board ❸.
3) Remove the zoom motor plug (green) ❺, focus motor plug (red) ❻, limiter switch plug (brown) ❼, and iris motor plug (green) ❽ from the CA4 board ❹.
4) Remove the CA4 board ❹ in the direction of the arrow Ⓑ.


❷ Screw (SB 2×4)
❸ CA3 board
❺ Zoom motor plug (green)
❹ CA4 board
❻ Focus motor plug (red)
❼ Limiter switch plug (brown)
❽ Iris motor plug (green)
Ⓑ
Ⓐ
❶ CA2 board

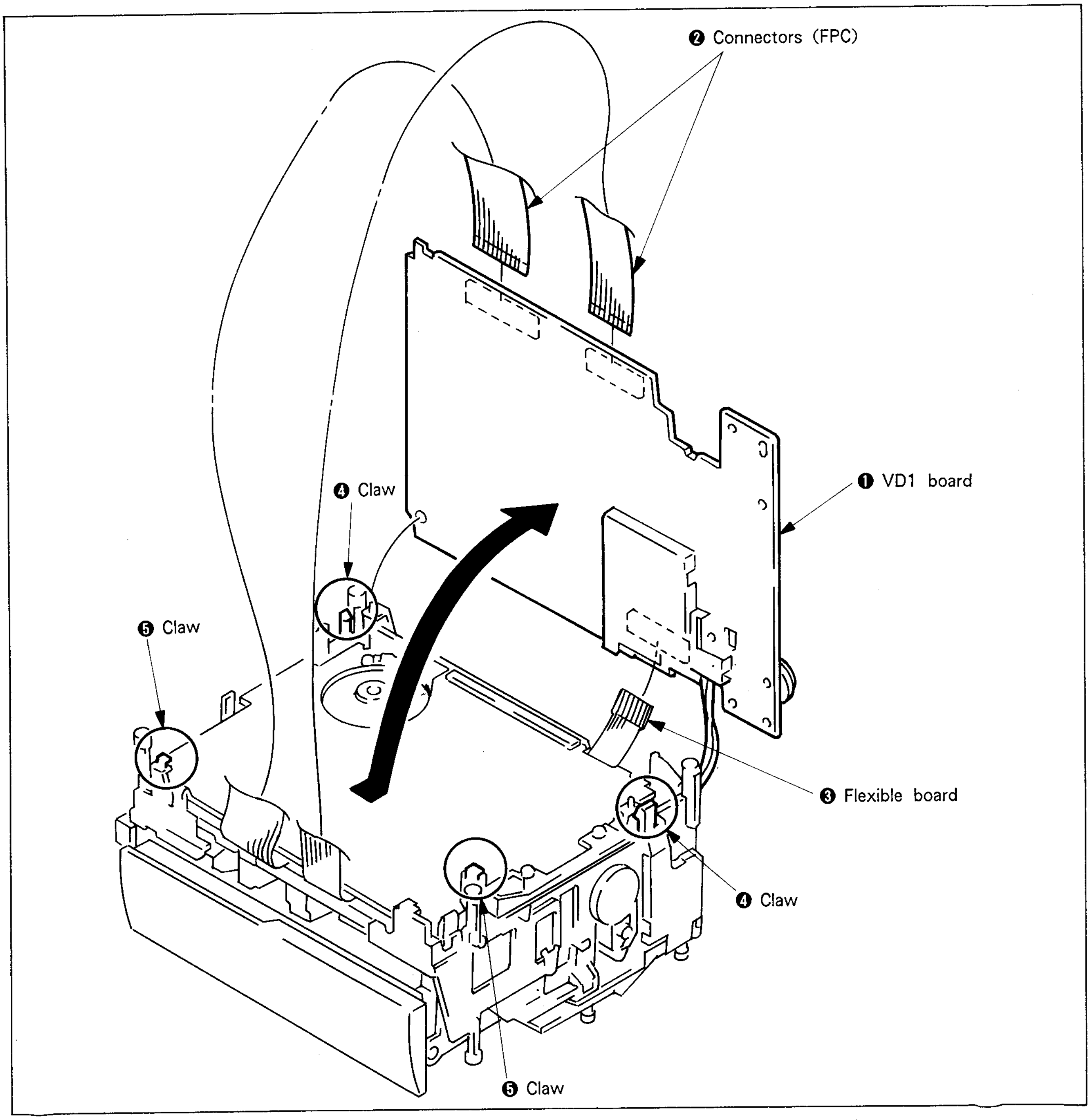
2-7. REMOVAL OF CA1 AND CA2 BOARDS

1) Remove the connector CN9206 (brown) ❷ from the CA1 board ❶.
2) Open the CA2 board ❸ approximately 45° and remove the connector ❹.
3) Remove the solder from section A ❺, and remove the shield case lower cover ❻.
4) Remove the two screws ❼.
5) Remove the CA1 board ❶ from the CCD ❽.


Shield case upper cover
❶ CA1 board
❼ Screw (S2 2×3E)
❽ CCD
❺ Soldered A sections
❹ Connectors
❸ CA2 board
❷ Connector CN9206 (brown)
❻ Shield case lower cover

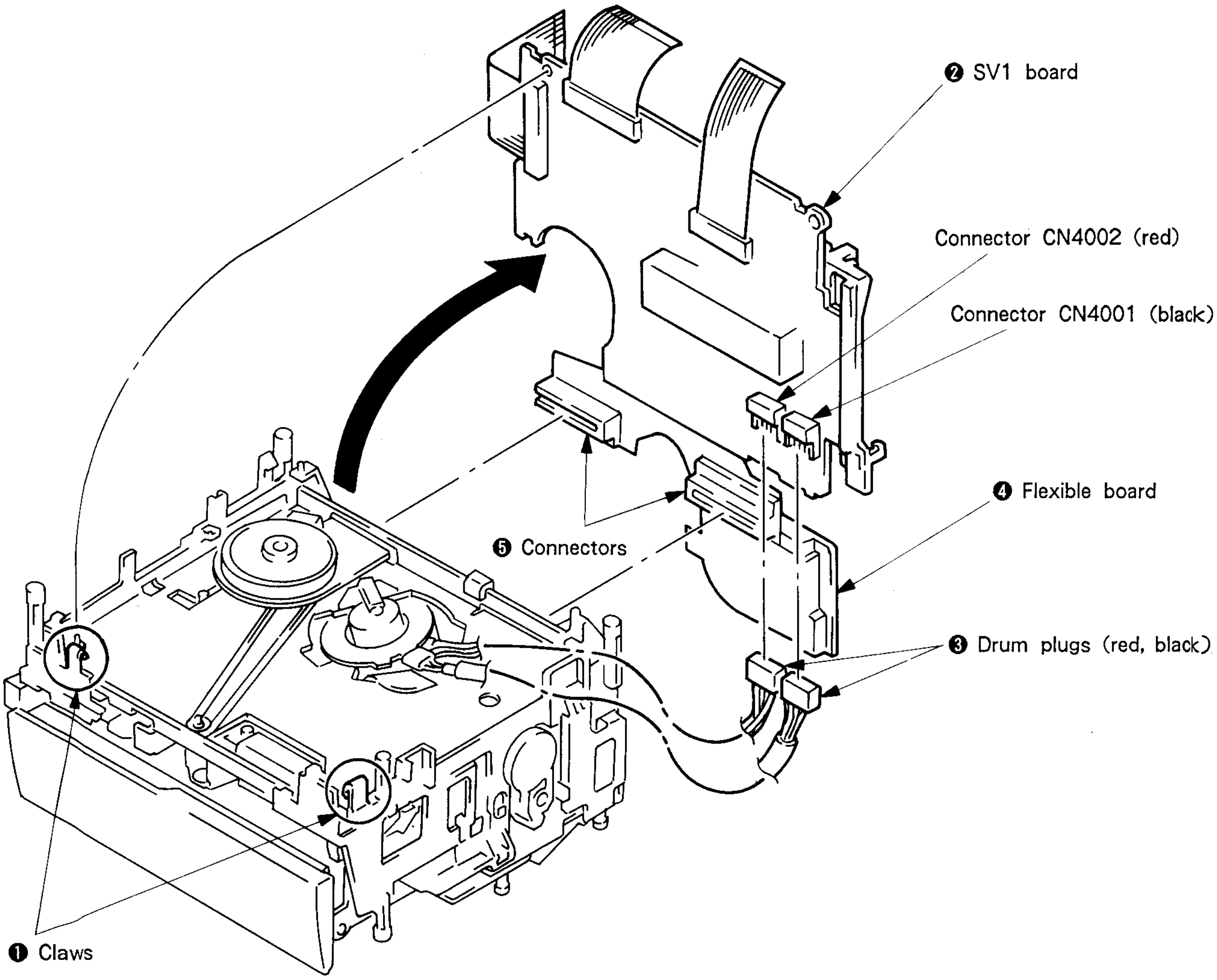
2-8. REMOVAL OF VD1 BOARD

1) Remove the connector (FPC) ❷ from the connectors CN1003 (brown) and CN1004 (brown) on the VD1 board ❶.
2) Remove the flexible board ❸ from the connector CN1007 (brown) on the VD1 board ❶.
3) Remove the two claws ❹ and slightly raise the VD1 board ❶.
4) Remove the two claws ❺ and remove the VD1 board ❶ in the direction of the arrow.


❷ Connectors (FPC)
❶ VD1 board
❹ Claw
❺ Claw
❸ Flexible board
❹ Claw
❺ Claw

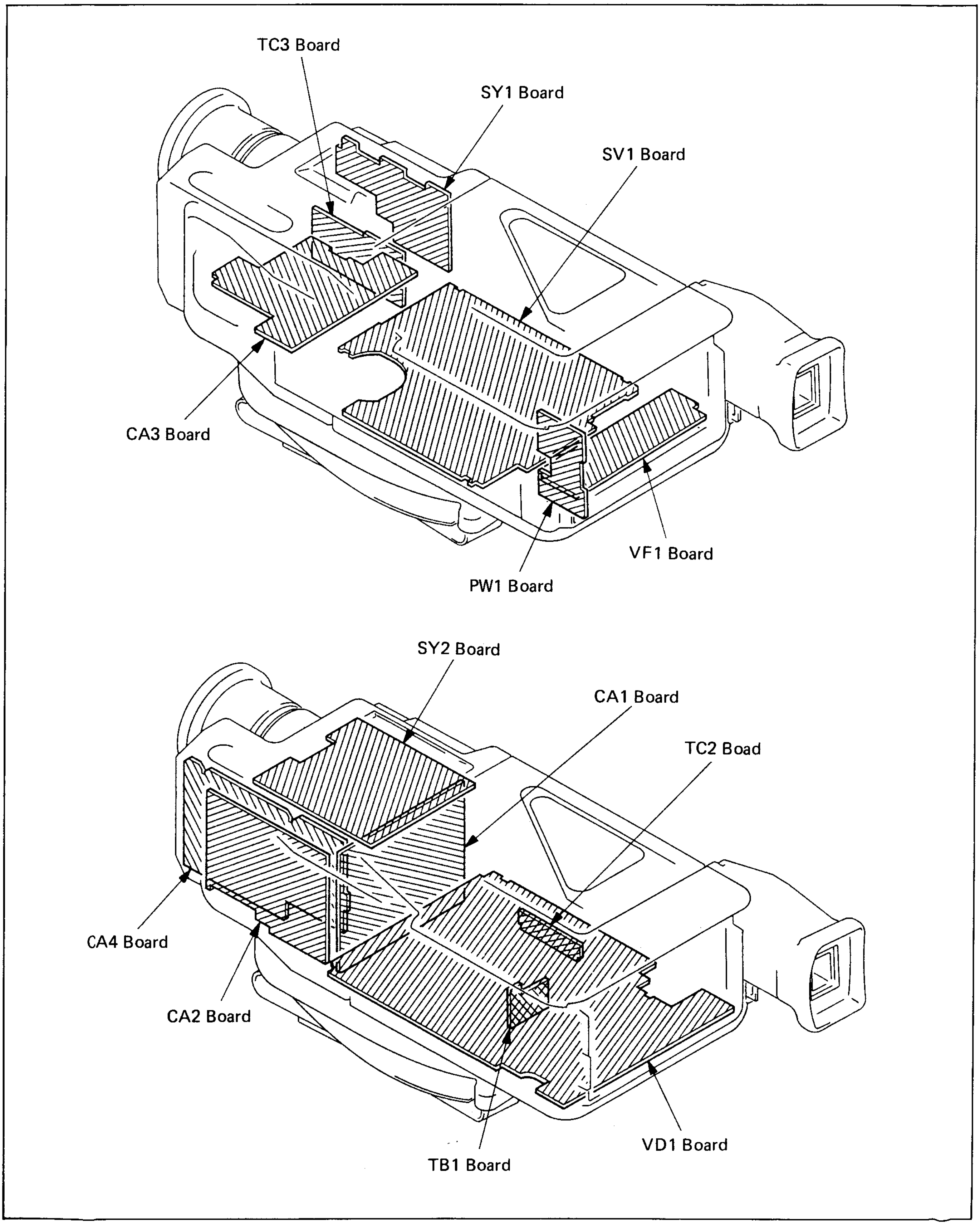
2-9. REMOVAL OF SV1 BOARD

1) Remove the two claws ❶.
2) Open the SV1 board ❷ in the direction of the arrow.
3) Remove the drum plugs (black, red) ❸ from the connectors CN4001 (black) and CN4002 (red) on the SV1 board.
4) Remove the two connectors ❺ on the flexible board ❹, and remove the SV1 board ❷.

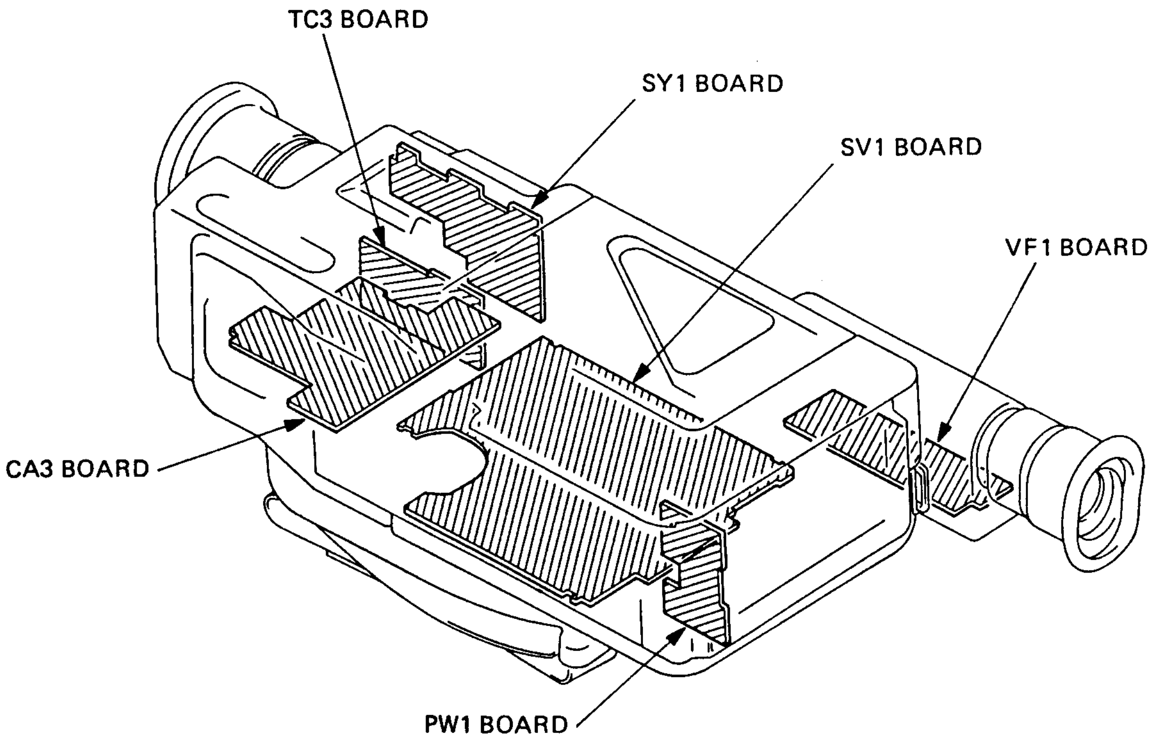

❷ SV1 board
Connector CN4002 (red)
Connector CN4001 (black)
❹ Flexible board
❺ Connectors
❸ Drum plugs (red, black)
❶ Claws

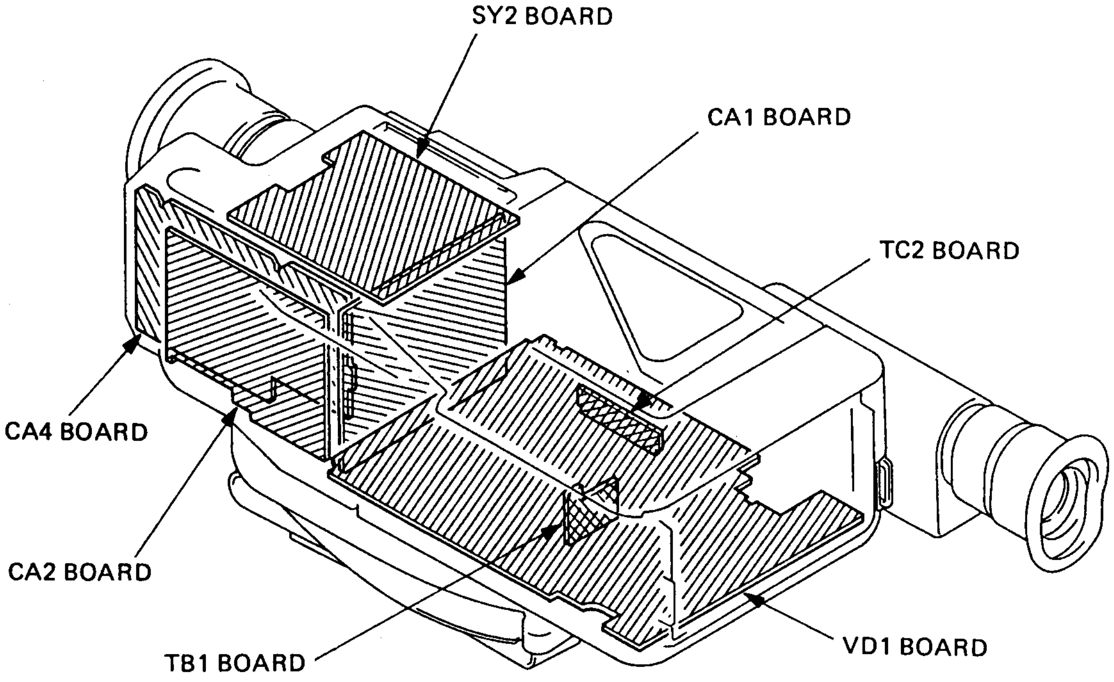
3. DIAGRAM

3-1. BOARD LAYOUT DIAGRAM

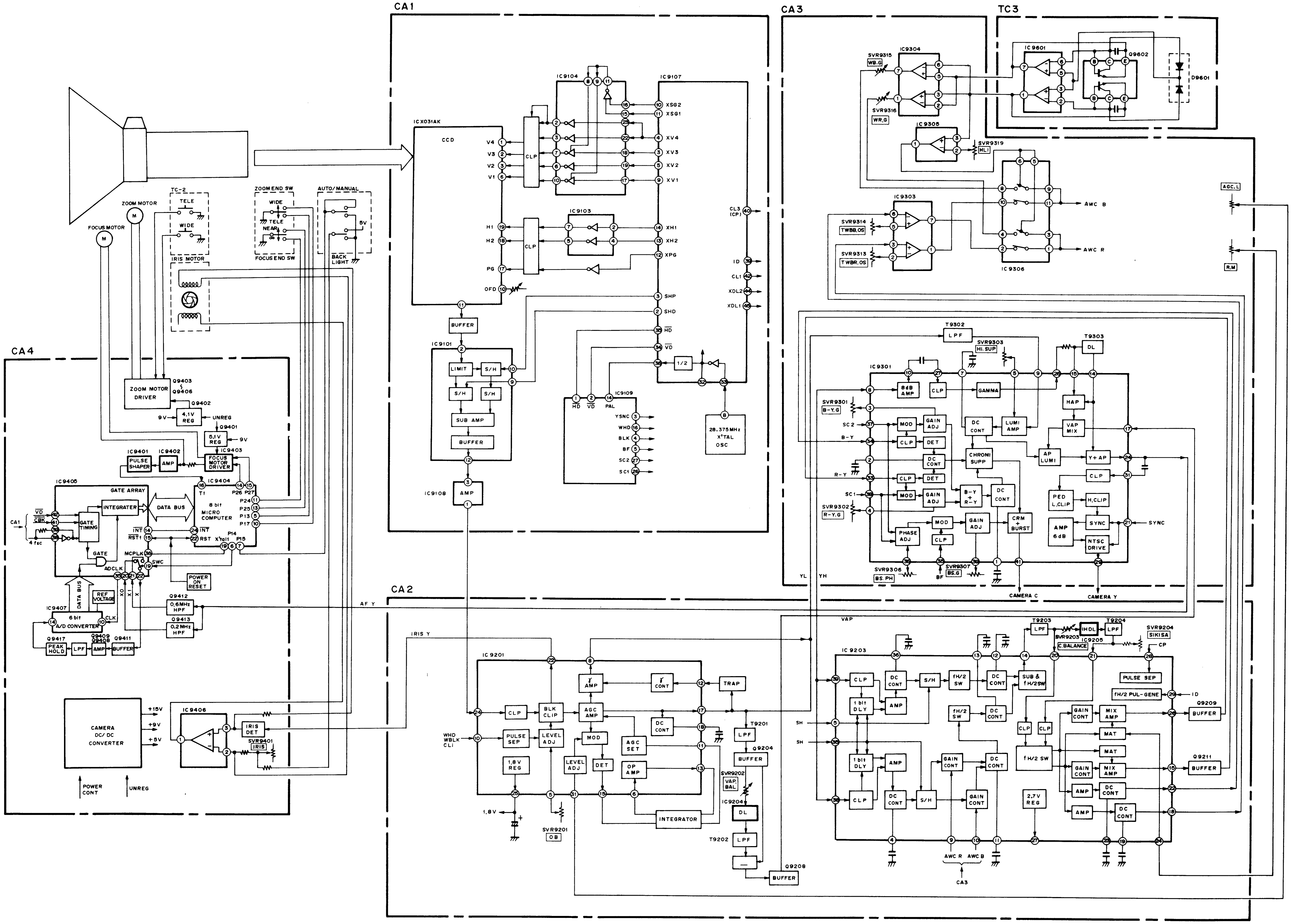

TC3 Board
SY1 Board
SV1 Board
CA3 Board
VF1 Board
PW1 Board
SY2 Board
CA1 Board
TC2 Boad
CA4 Board
CA2 Board
VD1 Board
TB1 Board

3-1. CIRCUIT BOARD LOCATIONS (Only for FVC-P701)

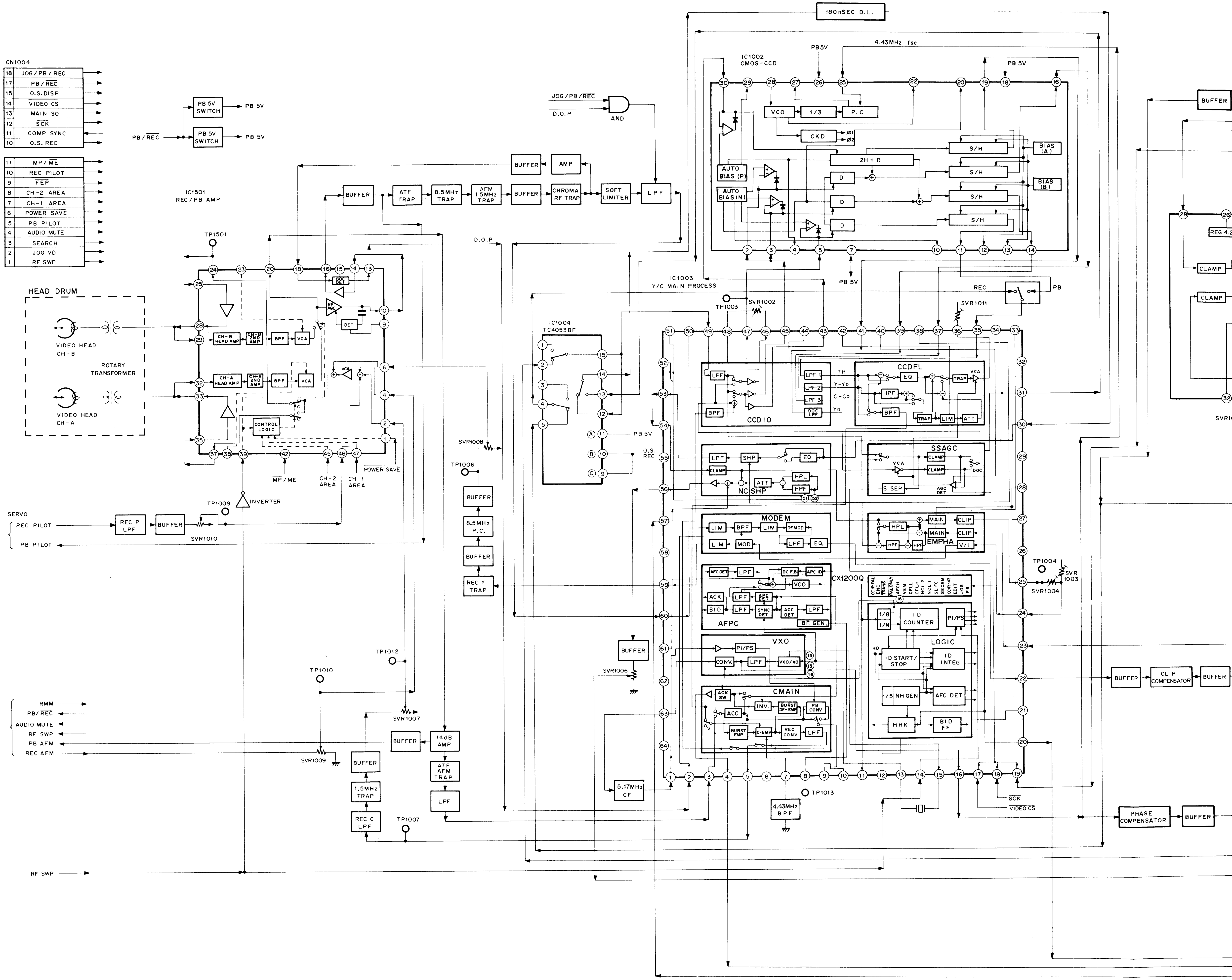

TC3 BOARD
SY1 BOARD
SV1 BOARD
VF1 BOARD
CA3 BOARD
PW1 BOARD

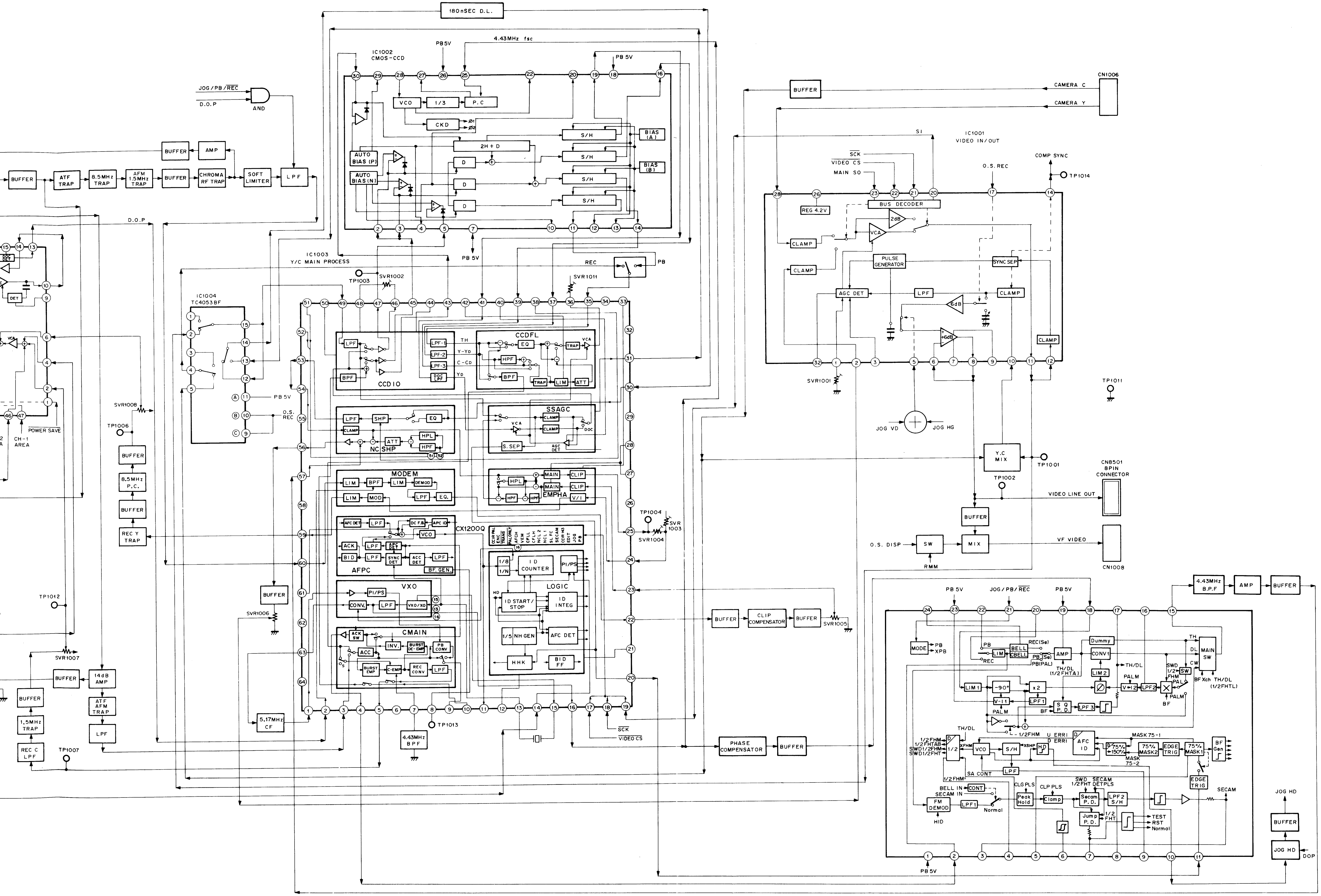

SY2 BOARD
CA1 BOARD
TC2 BOARD
CA4 BOARD
CA2 BOARD
TB1 BOARD
VD1 BOARD

3-2. CAMERA BLOCK DIAGRAM

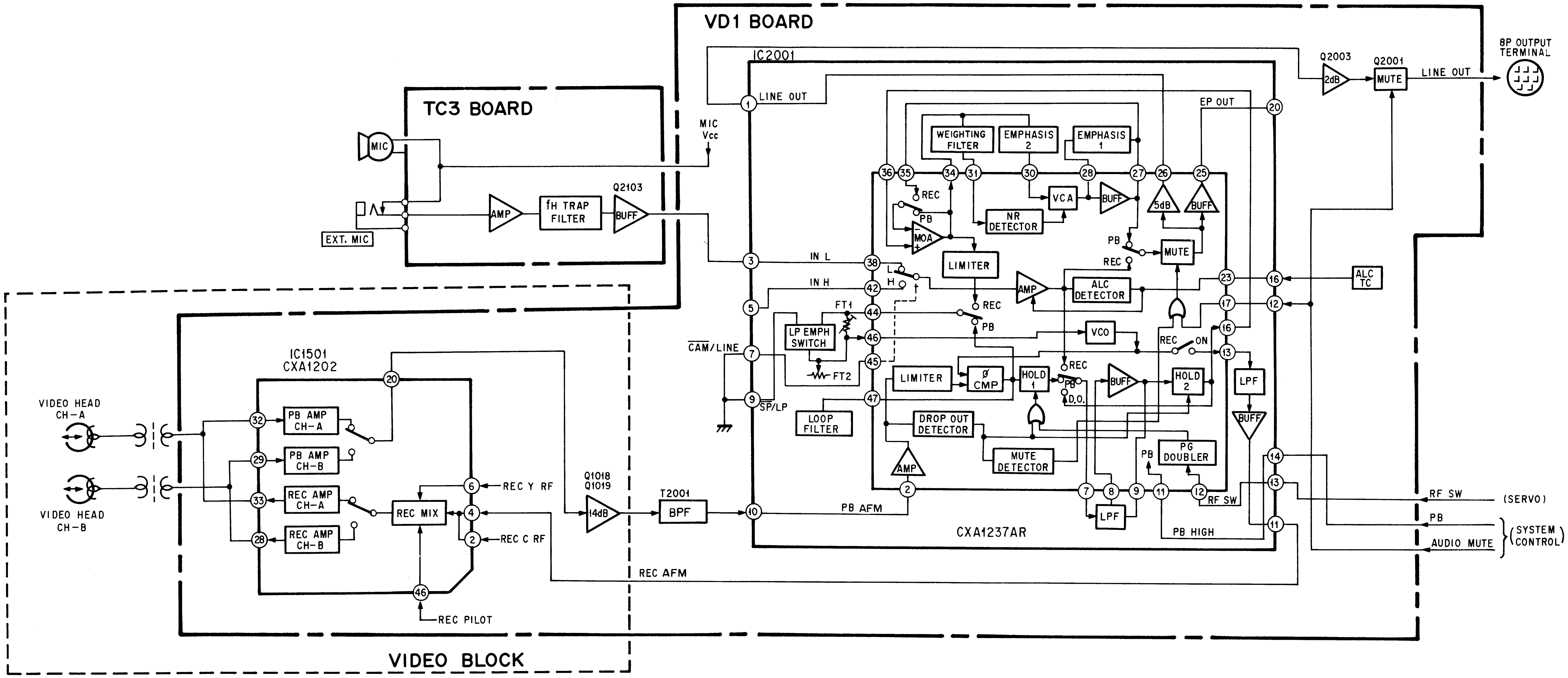

CA1
CA2
CA3
CA4
TC3
ICX031AK
CCD
IC9104
IC9107
IC9103
IC9101
IC9108
IC9109
BUFFER
LIMIT
S/H
SUB AMP
AMP
CLP
28.375MHz X'TAL OSC
1/2
ZOOM MOTOR
FOCUS MOTOR
IRIS MOTOR
TC-2
TELE
WIDE
ZOOM END SW
NEAR
FOCUS END SW
AUTO/MANUAL
BACK LIGHT
ZOOM MOTOR DRIVER
FOCUS MOTOR DRIVER
4.1V REG
5.1V REG
IC9401
IC9402
PULSE SHAPER
IC9403
IC9404
IC9405
IC9406
IC9407
GATE ARRAY
INTEGRATER
DATA BUS
GATE TIMING
8 bit MICRO COMPUTER
POWER ON RESET
REF VOLTAGE
6 bit A/D CONVERTER
PEAK HOLD
LPF
BUFFER
0.6MHz HPF
0.2MHz HPF
CAMERA DC/DC CONVERTER
POWER CONT
UNREG
IRIS DET
SVR9401 IRIS
AF Y
IRIS Y
IC9201
BLK CLIP
AGC AMP
γ AMP
γ CONT
DC CONT
TRAP
PULSE SEP
LEVEL ADJ
MOD
AGC SET
1.8V REG
DET
OP AMP
INTEGRATOR
SVR9201 OB
T9201
T9202
LPF
Q9204
SVR9202 VAP. BAL
IC9204
DL
Q9208
VAP
IC9203
IC9205
T9203
T9204
IHDL
SVR9203 C.BALANCE
SVR9204 SIKISA
S/H
fH/2 SW
1 bit DLY
SUB & fH/2SW
GAIN CONT
MIX AMP
MAT
PULSE SEP
fH/2 PUL-GENE
2.7V REG
Q9209
Q9211
AWC R
AWC B
IC9301
T9302
T9303
SVR9303 HI. SUP
8dB AMP
GAMMA
LUMI AMP
HAP
VAP MIX
CHRONI SUPP
AP LUMI
Y+AP
H.CLIP
PED L.CLIP
SYNC
AMP 6dB
NTSC DRIVE
CRM + BURST
PHASE ADJ
GAIN ADJ
B-Y + R-Y
SVR9301 B-Y.G
SVR9302 R-Y.G
SVR9306 BS.PH
SVR9307 BS.G
CAMERA C
CAMERA Y
IC9303
IC9304
IC9305
IC9306
SVR9313 TWBR.OS
SVR9314 TWBB.OS
SVR9315 WB.G
SVR9316 WR.G
SVR9319 HL.L
IC9601
Q9602
D9601
AGC.L
R.M

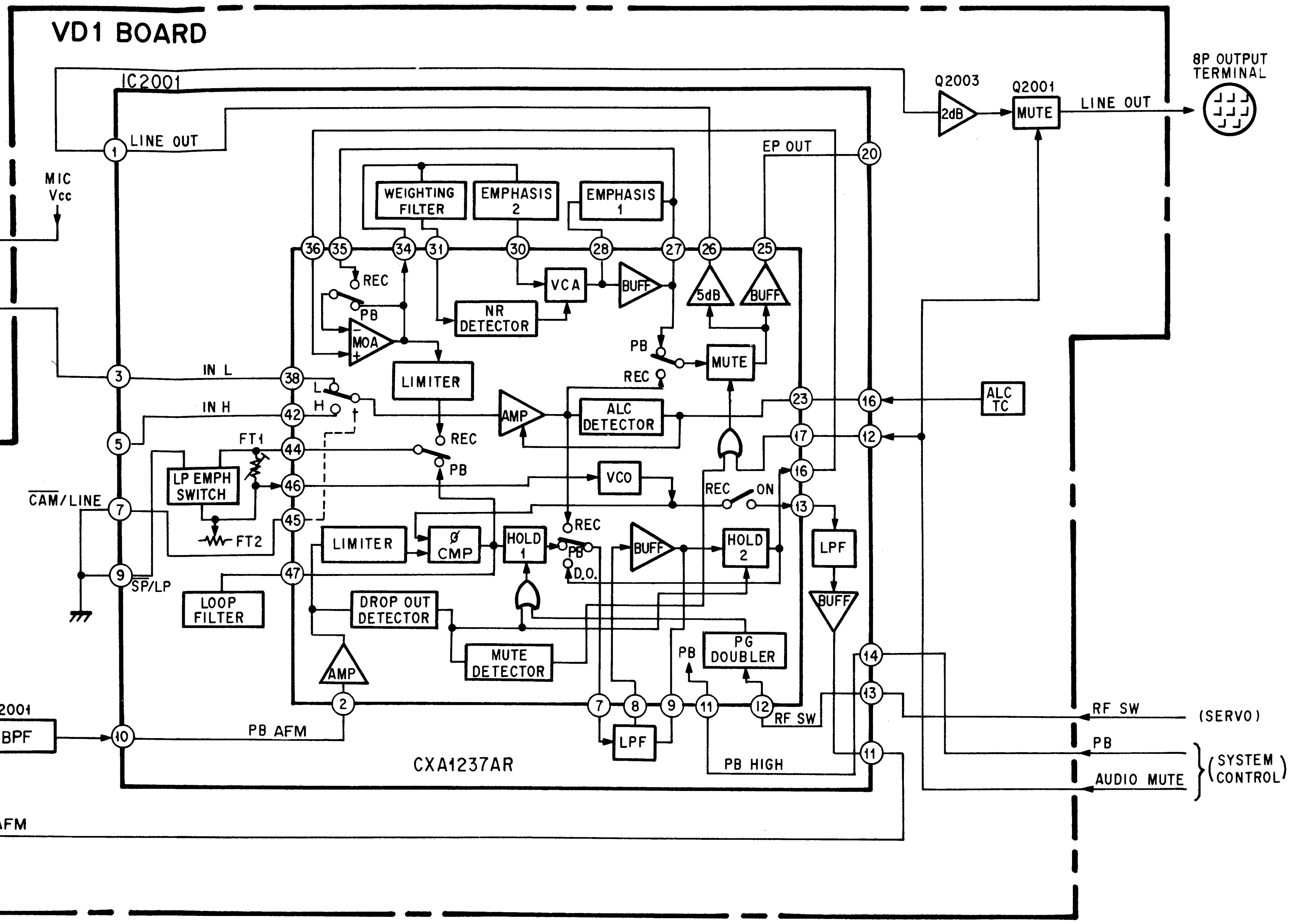
3-3. VIDEO BLOCK DIAGRAM


CN1004
18 JOG/PB/REC
17 PB/REC
15 O.S.DISP
14 VIDEO CS
13 MAIN SO
12 SCK
11 COMP SYNC
10 O.S.REC
11 MP/ME
10 REC PILOT
9 FEP
8 CH-2 AREA
7 CH-1 AREA
6 POWER SAVE
5 PB PILOT
4 AUDIO MUTE
3 SEARCH
2 JOG VD
1 RF SWP
PB 5V SWITCH
PB 5V
PB/REC
IC1501 REC/PB AMP
TP1501
HEAD DRUM
VIDEO HEAD CH-B
ROTARY TRANSFORMER
VIDEO HEAD CH-A
CH-B HEAD AMP
CH-B 2ND AMP
CH-A HEAD AMP
CH-A 2ND AMP
BPF
VCA
DET
CONTROL LOGIC
MP/ME
CH-2 AREA
CH-1 AREA
POWER SAVE
INVERTER
TP1009
SERVO
REC PILOT
PB PILOT
REC P LPF
BUFFER
SVR1010
BUFFER
ATF TRAP
8.5MHz TRAP
AFM 1.5MHz TRAP
CHROMA RF TRAP
SOFT LIMITER
LPF
AMP
D.O.P
JOG/PB/REC
AND
SVR1008
TP1006
8.5MHz P.C.
REC Y TRAP
TP1012
TP1010
RMM
PB/REC
AUDIO MUTE
RF SWP
PB AFM
REC AFM
SVR1009
SVR1007
1.5MHz TRAP
REC C LPF
14dB AMP
ATF AFM TRAP
TP1007
RF SWP
180nSEC D.L.
IC1002 CMOS-CCD
PB 5V
4.43MHz fsc
VCO
1/3
P.C
CKD
2H + D
S/H
BIAS (A)
BIAS (B)
AUTO BIAS (P)
AUTO BIAS (N)
D
IC1003 Y/C MAIN PROCESS
TP1003
SVR1002
SVR1011
REC
PB
IC1004 TC4053BF
O.S. REC
CCD10
LPF-1
LPF-2
LPF-3
DOC LPF
TH
Y-YD
C-CD
YD
CCDFL
EQ
HPF
TRAP
LIM
ATT
SSAGC
CLAMP
S.SEP
AGC DET
DOC
SHP
HPL
NC SHP
MODEM
LIM
DEMOD
MOD
EQ.
MAIN
CLIP
EMPHA
V/I
AFC DET
DC F.B.
APC ID
ACK
BID
APC DET
SYNC DET
ACC DET
BF GEN.
AFPC
CX1200Q
VXO
PI/PS
CONV.
VXO/XO
CMAIN
ACK SW
INV.
BURST DE-EMP
PB CONV
ACC
BURST EMP
C-EMP
REC CONV
1/8
1/N
ID COUNTER
ID START/STOP
ID INTEG
LOGIC
1/5 NH GEN
AFC DET
HHK
BID FF
TP1004
SVR 1003
SVR1004
BUFFER
SVR1006
5.17MHz CF
4.43MHz BPF
TP1013
SCK
VIDEO CS
CLIP COMPENSATOR
PHASE COMPENSATOR
CLAMP
REG 4.2

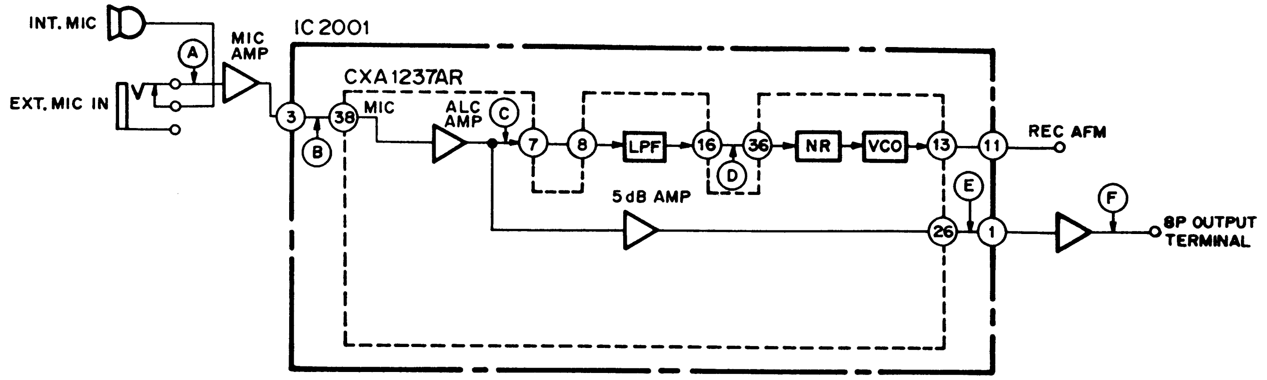

180nSEC D.L.
4.43MHz fsc
PB 5V
IC1002
CMOS-CCD
VCO
1/3
P.C
CKD
Ø1
Ø2
2H + D
S/H
BIAS (A)
BIAS (B)
AUTO BIAS (P)
AUTO BIAS (N)
D
JOG/PB/REC
D.O.P
AND
BUFFER
AMP
ATF TRAP
8.5MHz TRAP
AFM 1.5MHz TRAP
CHROMA RF TRAP
SOFT LIMITER
LPF
DET
POWER SAVE
CH-1 AREA
SVR1008
TP1006
8.5MHz P.C.
REC Y TRAP
IC1004
TC4053BF
PB 5V
O.S. REC
IC1003
Y/C MAIN PROCESS
TP1003
SVR1002
SVR1011
REC
PB
CCD10
LPF-1
LPF-2
LPF-3
DOC LPF
TH
Y-YD
C-CD
YD
CCDFL
EQ
HPF
BPF
TRAP
LIM
ATT
VCA
SHP
CLAMP
NC SHP
HPL
SSAGC
S. SEP
AGC DET
DOC
MODEM
DEMOD
MOD
EMPHA
MAIN
CLIP
V/I
AFC DET
DC F.B.
APC ID
ACK
BID
SYNC DET
ACC DET
BF. GEN.
AFPC
CX1200Q
VXO
PI/PS
CONV.
VXO/XO
CMAIN
ACK SW
INV.
BURST DE-EMP
PB CONV
ACC
BURST EMP
C-EMP
REC CONV
1/8
1/N
ID COUNTER
LOGIC
HD
ID START/STOP
ID INTEG
1/5 NH GEN
AFC DET
HHK
BID FF
TP1004
SVR1003
SVR1004
SVR1006
SVR1007
TP1012
14dB AMP
ATF AFM TRAP
1.5MHz TRAP
REC C LPF
TP1007
5.17MHz CF
4.43MHz BPF
TP1013
SCK
VIDEO CS
CLIP COMPENSATOR
SVR1005
PHASE COMPENSATOR
CAMERA C
CAMERA Y
CN1006
IC1001
VIDEO IN/OUT
SI
SCK
VIDEO CS
MAIN SO
O.S. REC
COMP SYNC
TP1014
REG 4.2V
BUS DECODER
2dB
CLAMP
PULSE GENERATOR
SYNC SEP
AGC DET
6dB
+6dB
SVR1001
TP1011
JOG VD
JOG HG
Y.C MIX
TP1001
TP1002
CN8501
8PIN CONNECTOR
VIDEO LINE OUT
O.S. DISP
SW
RMM
MIX
VF VIDEO
CN1008
4.43MHz B.P.F
PB 5V
JOG/PB/REC
MODE
PB
XPB
REC
LIM
BELL
CBELL
REC(Se)
PB(Se)
PB(PAL)
TH/DL (1/2FHTA)
Dummy
CONV1
TH/DL
LIM 2
PALM
V÷2
LPF2
SWD 1/2 FHM PAL
MAIN SW
DL
CW
BF Xch TH/DL (1/2FHTL)
LIM1
-90°
x2
V-1
LPF1
S Q P.D.
LPF 3
BF
1/2FHM
U ERRI
D ERRI
MASK75-1
1/2FHM
1/2FHTAB
SWD1/2FHM
SWD1/2FHT
XFHM
1/2
XSHP
AFC ID
75%/150%
75% MASK2
EDGE TRIG
75% MASK1
BF Gen
MASK 75-2
SA CONT
BELL IN
SECAM IN
CONT
FM DEMOD
HID
Normal
CLG PLS
Peak Hold
CLP PLS
Clamp
SWD 1/2FHT
SECAM DETPLS
Secam P.D.
LPF2 S/H
Jump P.D.
1/2 FHT
TEST
RST
Normal
SECAM
JOG HD
DOP

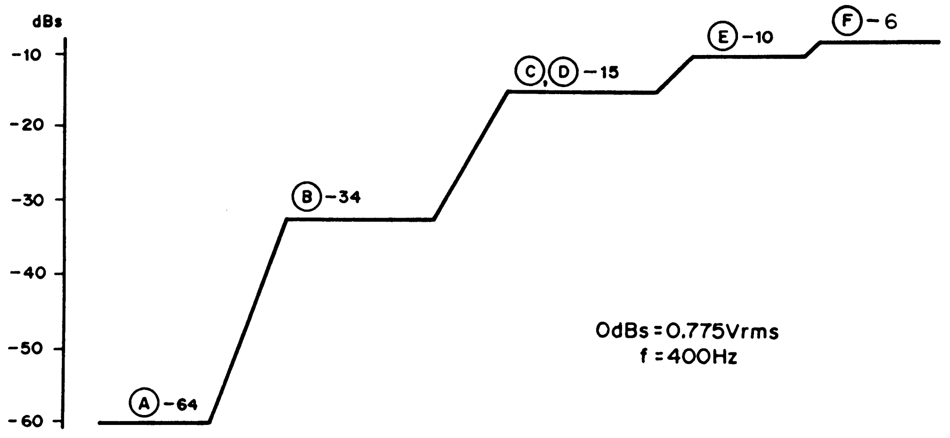
3-4. AUDIO BLOCK DIAGRAM

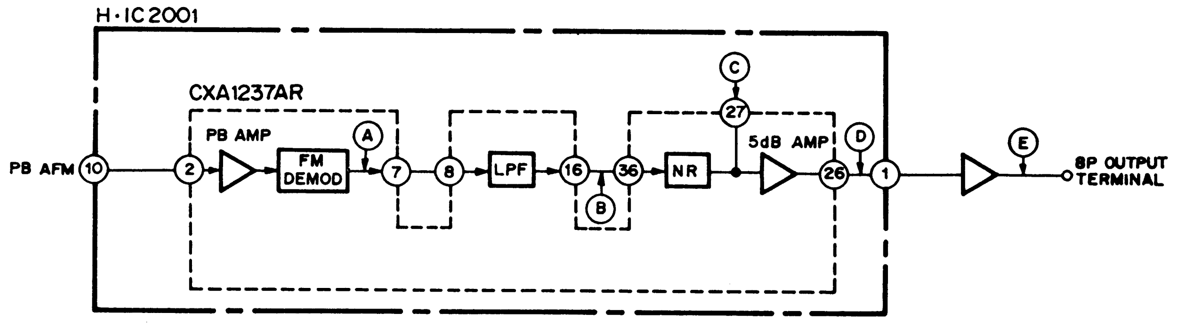

VD1 BOARD
IC2001
LINE OUT
EP OUT
Q2003
2dB
Q2001
MUTE
LINE OUT
8P OUTPUT TERMINAL
TC3 BOARD
MIC
EXT. MIC
MIC Vcc
AMP
fH TRAP FILTER
Q2103
BUFF
WEIGHTING FILTER
EMPHASIS 2
EMPHASIS 1
VCA
BUFF
5dB
BUFF
REC
PB
MOA
NR DETECTOR
PB
MUTE
REC
LIMITER
IN L
IN H
L
H
REC
PB
AMP
ALC DETECTOR
ALC TC
FT1
LP EMPH SWITCH
FT2
VCO
REC
ON
CAM/LINE
SP/LP
LIMITER
Ø CMP
HOLD 1
REC
PB
D.O.
BUFF
HOLD 2
LPF
LOOP FILTER
DROP OUT DETECTOR
MUTE DETECTOR
BUFF
PG DOUBLER
PB
AMP
RF SW
LPF
PB AFM
CXA1237AR
PB HIGH
RF SW
(SERVO)
PB
AUDIO MUTE
(SYSTEM CONTROL)
IC1501
CXA1202
VIDEO HEAD CH-A
VIDEO HEAD CH-B
PB AMP CH-A
PB AMP CH-B
REC AMP CH-A
REC AMP CH-B
REC MIX
REC Y RF
REC C RF
REC PILOT
Q1018
Q1019
14dB
T2001
BPF
REC AFM
VIDEO BLOCK
1
2
3
4
5
6
7
8
9
10
11
12
13
14
16
17
20
23
25
26
27
28
29
30
31
32
33
34
35
36
38
42
44
45
46
47

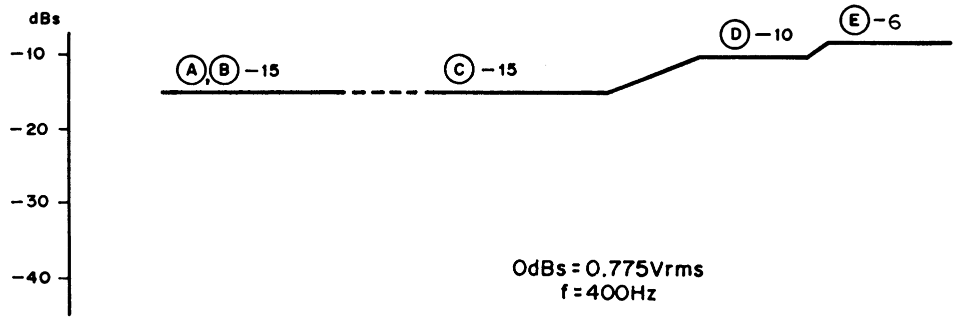

VD1 BOARD
IC2001
LINE OUT
MIC Vcc
Q2003
2dB
Q2001
MUTE
LINE OUT
8P OUTPUT TERMINAL
EP OUT
WEIGHTING FILTER
EMPHASIS 2
EMPHASIS 1
VCA
BUFF
5dB
BUFF
REC
PB
MOA
NR DETECTOR
PB
REC
MUTE
IN L
IN H
L
H
LIMITER
AMP
ALC DETECTOR
ALC TC
FT1
LP EMPH SWITCH
FT2
REC
PB
VCO
REC
ON
CAM/LINE
SP/LP
LIMITER
Ø CMP
HOLD 1
REC
PB
D.O.
BUFF
HOLD 2
LPF
BUFF
LOOP FILTER
DROP OUT DETECTOR
MUTE DETECTOR
PB
PG DOUBLER
AMP
LPF
2001
BPF
PB AFM
CXA1237AR
PB HIGH
RF SW
RF SW
(SERVO)
PB
AUDIO MUTE
SYSTEM CONTROL
AFM

3-5. AUDIO LEVEL DIAGRAM

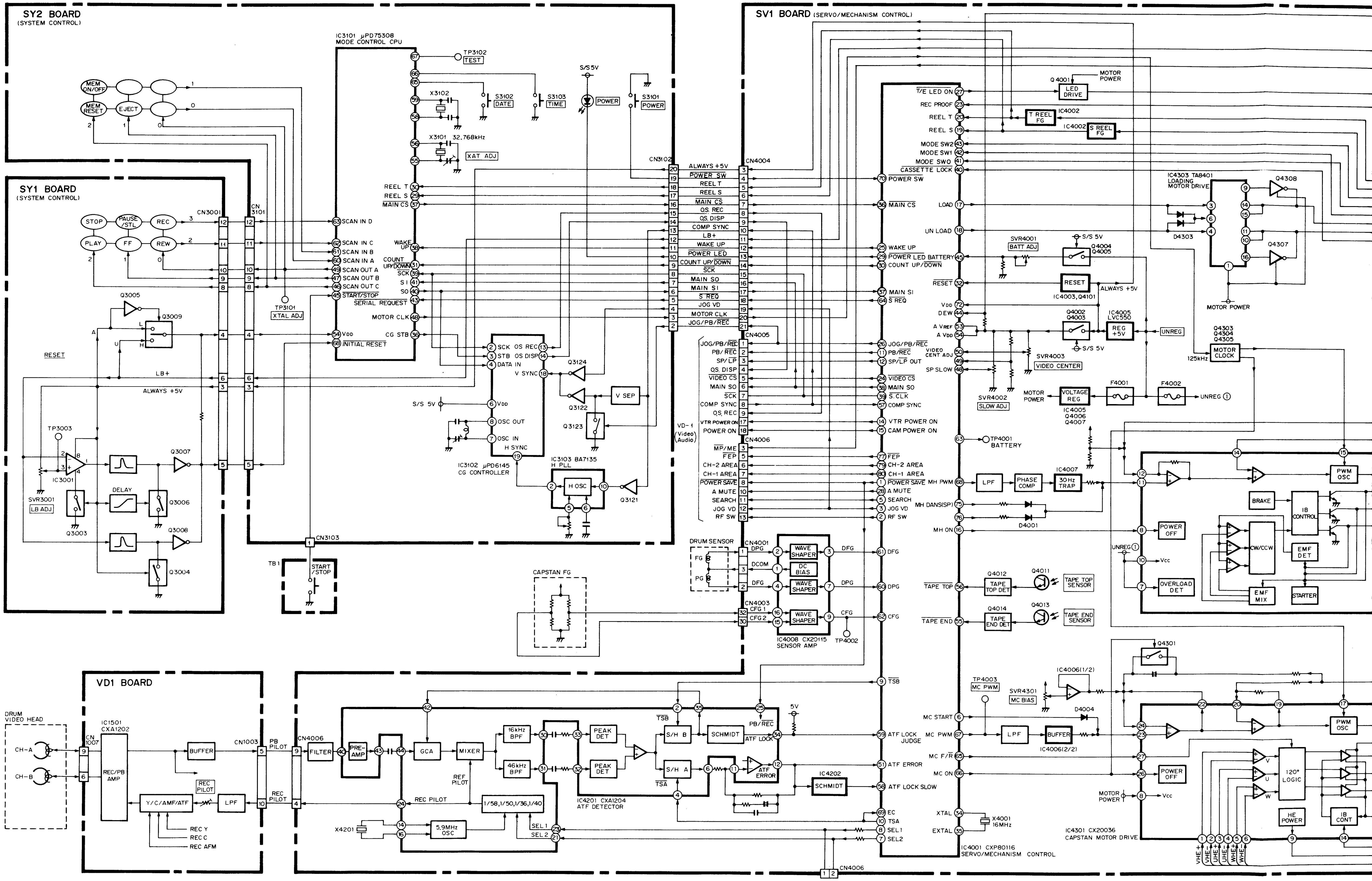

INT. MIC
EXT. MIC IN
A
MIC AMP
IC2001
CXA1237AR
MIC
ALC AMP
C
B
LPF
D
NR
VCO
5dB AMP
E
REC AFM
F
8P OUTPUT TERMINAL

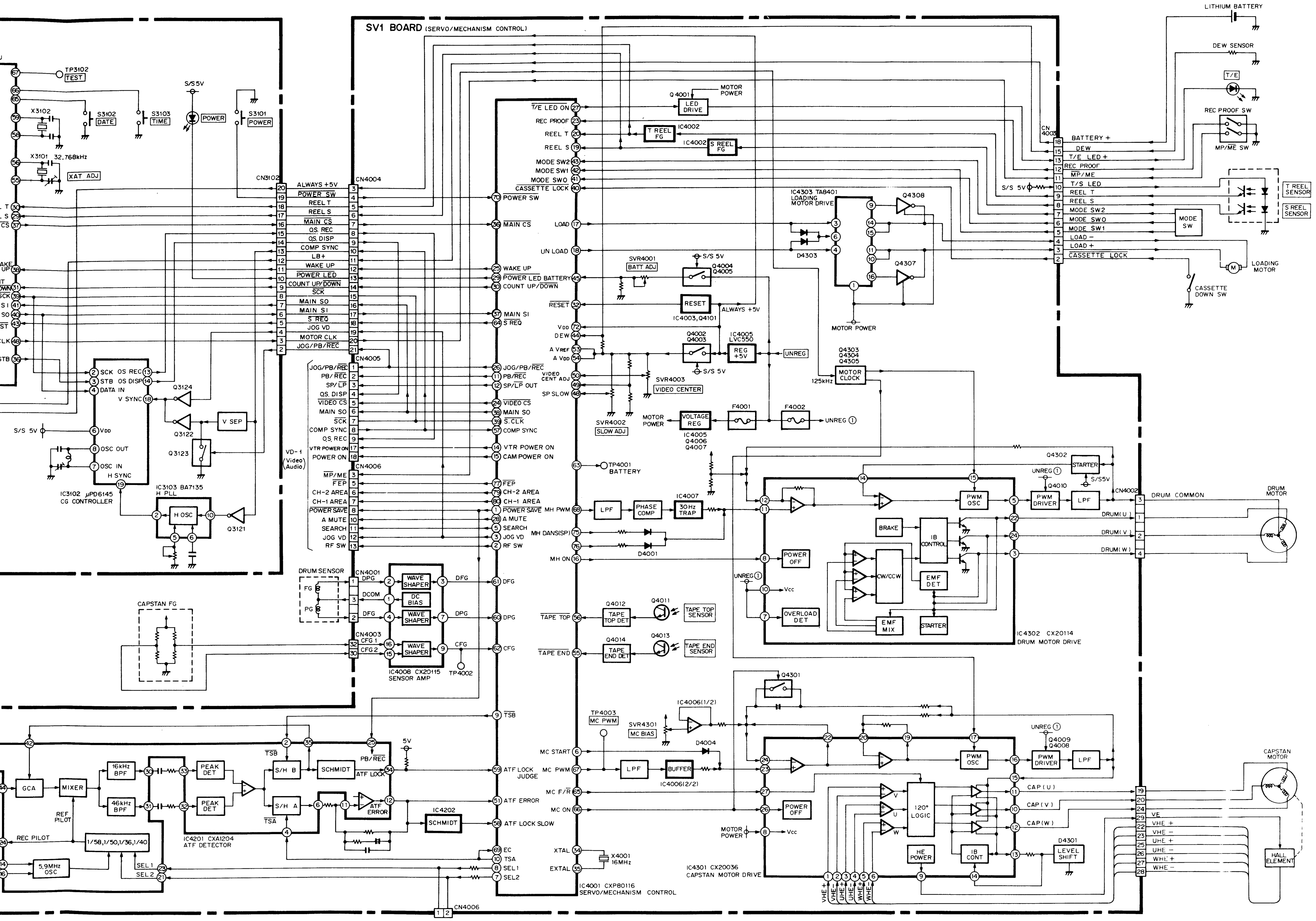



H·IC2001
CXA1237AR
PB AFM
PB AMP
A
FM DEMOD
LPF
B
C
NR
5dB AMP
D
E
8P OUTPUT TERMINAL

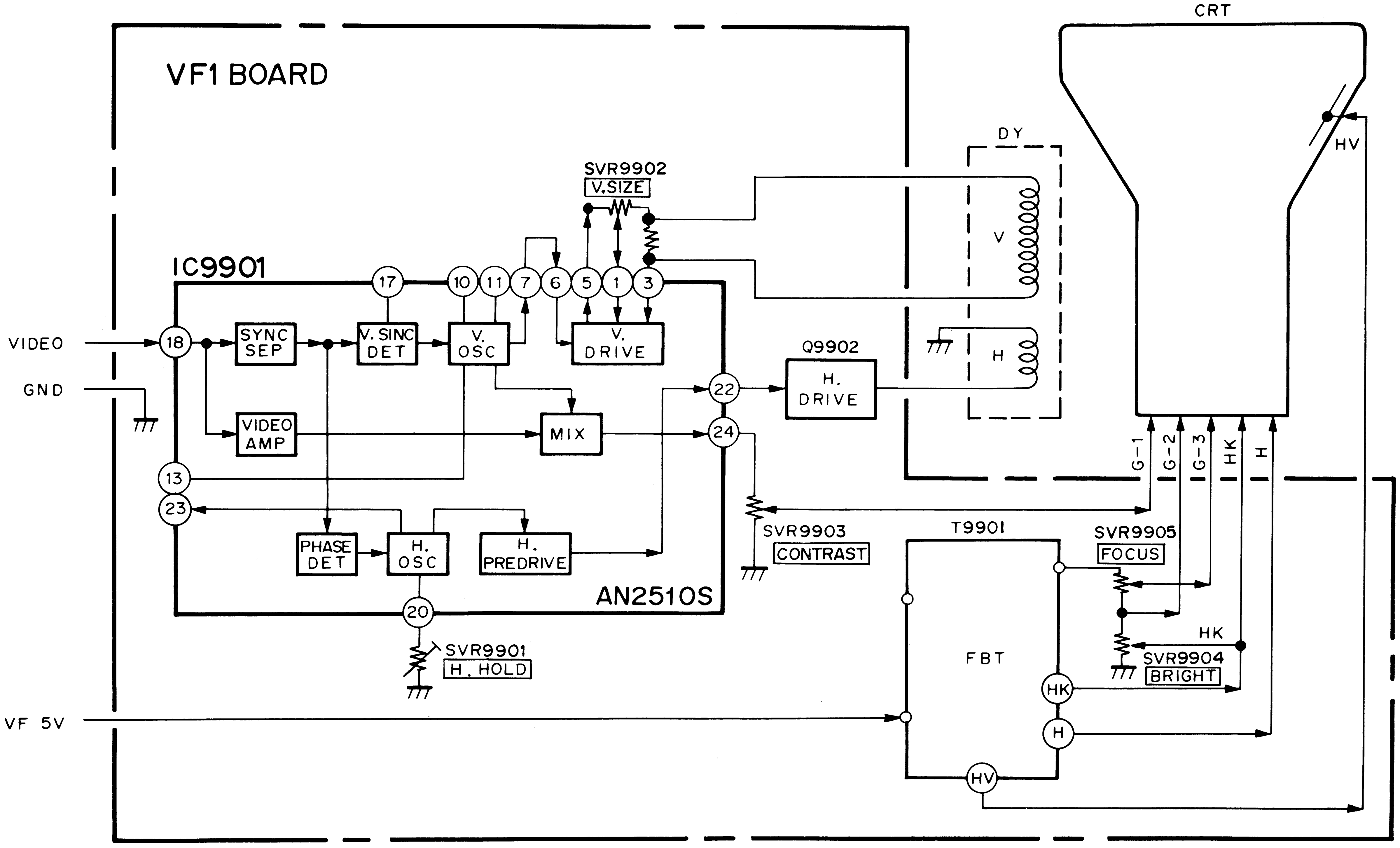


3-6. SERVO BLOCK DIAGRAM/ SYSTEM CONTROL DIAGRAM


SY2 BOARD
(SYSTEM CONTROL)
IC3101 μPD75308
MODE CONTROL CPU
TP3102
TEST
MEM ON/OFF
MEM RESET
EJECT
X3102
S3102 DATE
S3103 TIME
S/S 5V
POWER
S3101 POWER
X3101 32.768kHz
XAT ADJ
SY1 BOARD
(SYSTEM CONTROL)
STOP
PAUSE /STL
REC
PLAY
FF
REW
CN3001
CN 3101
SCAN IN D
SCAN IN C
SCAN IN B
SCAN IN A
SCAN OUT A
SCAN OUT B
SCAN OUT C
START/STOP
SERIAL REQUEST
MOTOR CLK
CG STB
VDD
INITIAL RESET
REEL T
REEL S
MAIN CS
WAKE UP
COUNT UP/DOWN
SCK
SI
SO
TP3101
XTAL ADJ
Q3005
Q3009
RESET
LB+
ALWAYS +5V
TP3003
IC3001
SVR3001
LB ADJ
Q3007
DELAY
Q3003
Q3006
Q3008
Q3004
IC3102 μPD6145
CG CONTROLLER
SCK OS REC
STB OS DISP
DATA IN
V SYNC
OSC OUT
OSC IN
H SYNC
Q3124
Q3122
Q3123
V SEP
IC3103 BA7135
H PLL
H OSC
Q3121
CN3103
TB1
START /STOP
CN3102
ALWAYS +5V
POWER SW
REEL T
REEL S
MAIN CS
OS REC
OS DISP
COMP SYNC
LB+
WAKE UP
POWER LED
COUNT UP/DOWN
SCK
MAIN SO
MAIN SI
S REQ
JOG VD
MOTOR CLK
JOG/PB/REC
CN4004
CN4005
JOG/PB/REC
PB/REC
SP/LP
OS DISP
VIDEO CS
MAIN SO
SCK
COMP SYNC
OS REC
VTR POWER ON
POWER ON
VD-1 (Video) (Audio)
CN4006
MP/ME
FEP
CH-2 AREA
CH-1 AREA
POWER SAVE
A MUTE
SEARCH
JOG VD
RF SW
SV1 BOARD (SERVO/MECHANISM CONTROL)
T/E LED ON
REC PROOF
REEL T
REEL S
MODE SW2
MODE SW1
MODE SW0
CASSETTE LOCK
POWER SW
MAIN CS
LOAD
UN LOAD
WAKE UP
POWER LED BATTERY
COUNT UP/DOWN
RESET
MAIN SI
S REQ
VDD
DEW
A VREF
A VDD
JOG/PB/REC
PB/REC
SP/LP OUT
VIDEO CENT ADJ
SP SLOW
VIDEO CS
MAIN SO
S.CLK
COMP SYNC
VTR POWER ON
CAM POWER ON
TP4001 BATTERY
FEP
CH-2 AREA
CH-1 AREA
POWER SAVE MH PWM
A MUTE
SEARCH
JOG VD
RF SW
MH DANS(SP)
MH ON
Q4001
LED DRIVE
MOTOR POWER
T REEL FG
IC4002
S REEL FG
SVR4001
BATT ADJ
Q4004
Q4005
IC4003, Q4101
Q4002
Q4003
IC4005 LVC550
REG +5V
UNREG
SVR4003
VIDEO CENTER
SVR4002
SLOW ADJ
MOTOR POWER
VOLTAGE REG
IC4005
Q4006
Q4007
F4001
F4002
UNREG ①
LPF
PHASE COMP
IC4007
30Hz TRAP
D4001
IC4303 TA8401
LOADING MOTOR DRIVE
D4303
Q4308
Q4307
MOTOR POWER
Q4303
Q4304
Q4305
125kHz
MOTOR CLOCK
PWM OSC
BRAKE
IB CONTROL
CW/CCW
EMF DET
EMF MIX
STARTER
POWER OFF
OVERLOAD DET
Vcc
DRUM SENSOR
FG
PG
CN4001
DPG
DCOM
DFG
WAVE SHAPER
DC BIAS
CN4003
CFG 1
CFG 2
IC4008 CX20115
SENSOR AMP
TP4002
CAPSTAN FG
DFG
DPG
CFG
Q4012
TAPE TOP DET
Q4011
TAPE TOP SENSOR
Q4014
TAPE END DET
Q4013
TAPE END SENSOR
TAPE TOP
TAPE END
TSB
Q4301
IC4006(1/2)
TP4003
MC PWM
SVR4301
MC BIAS
D4004
MC START
ATF LOCK JUDGE
MC PWM
BUFFER
IC4006(2/2)
MC F/R
MC ON
ATF ERROR
ATF LOCK SLOW
EC
TSA
SEL1
SEL2
XTAL
EXTAL
X4001 16MHz
IC4001 CXP80116
SERVO/MECHANISM CONTROL
MOTOR POWER
IC4301 CX20036
CAPSTAN MOTOR DRIVE
120° LOGIC
HE POWER
IB CONT
VHE
UHE
WHE
CN4006
VD1 BOARD
DRUM VIDEO HEAD
CH-A
CH-B
CN 1007
IC1501 CXA1202
REC/PB AMP
BUFFER
CN1003
PB PILOT
REC PILOT
Y/C/AMF/ATF
LPF
REC Y
REC C
REC AFM
FILTER
PRE-AMP
GCA
MIXER
16kHz BPF
46kHz BPF
PEAK DET
REF PILOT
REC PILOT
1/58,1/50,1/36,1/40
X4201
5.9MHz OSC
SEL 1
SEL 2
IC4201 CXA1204
ATF DETECTOR
S/H B
S/H A
SCHMIDT
PB/REC
ATF LOCK
ATF ERROR
IC4202
SCHMIDT
5V


SV1 BOARD (SERVO/MECHANISM CONTROL)
LITHIUM BATTERY
DEW SENSOR
T/E
REC PROOF SW
MP/ME SW
T REEL SENSOR
S REEL SENSOR
MODE SW
LOADING MOTOR
CASSETTE DOWN SW
TP3102
TEST
S/S5V
X3102
S3102
DATE
S3103
TIME
POWER
S3101
POWER
X3101 32.768kHz
XAT ADJ
CN3102
CN4004
ALWAYS +5V
POWER SW
REEL T
REEL S
MAIN CS
OS REC
OS DISP
LB+
COMP SYNC
WAKE UP
POWER LED
COUNT UP/DOWN
SCK
MAIN SO
MAIN SI
S REQ
JOG VD
MOTOR CLK
JOG/PB/REC
CN4005
PB/REC
SP/LP
OS DISP
VIDEO CS
MAIN SO
SCK
COMP SYNC
OS REC
VTR POWER ON
POWER ON
VD-1 (Video/Audio)
CN4006
MP/ME
FEP
CH-2 AREA
CH-1 AREA
POWER SAVE
A MUTE
SEARCH
JOG VD
RF SW
SCK OS REC
STB OS DISP
DATA IN
V SYNC
VDD
OSC OUT
OSC IN
H SYNC
IC3102 μPD6145
CG CONTROLLER
Q3124
Q3122
Q3123
V SEP
S/S 5V
IC3103 BA7135
H PLL
H OSC
Q3121
T/E LED ON
REC PROOF
REEL T
REEL S
MODE SW2
MODE SW1
MODE SW0
CASSETTE LOCK
POWER SW
MAIN CS
LOAD
UN LOAD
WAKE UP
POWER LED
BATTERY
COUNT UP/DOWN
RESET
MAIN SI
S REQ
VDD
DEW
A VREF
A VDD
JOG/PB/REC
PB/REC
VIDEO CENT ADJ
SP/LP OUT
SP SLOW
VIDEO CS
MAIN SO
S.CLK
COMP SYNC
VTR POWER ON
CAM POWER ON
TP4001
BATTERY
FEP
CH-2 AREA
CH-1 AREA
POWER SAVE
A MUTE
SEARCH
JOG VD
RF SW
MH PWM
MH DANS(SP)
MH ON
DFG
DPG
CFG
TAPE TOP
TAPE END
TSB
ATF LOCK JUDGE
ATF ERROR
ATF LOCK SLOW
EC
TSA
SEL1
SEL2
MC START
MC PWM
MC F/R
MC ON
XTAL
EXTAL
X4001 16MHz
IC4001 CXP80116
SERVO/MECHANISM CONTROL
Q4001
LED DRIVE
MOTOR POWER
T REEL FG
IC4002
S REEL FG
SVR4001
BATT ADJ
Q4004
Q4005
RESET
IC4003,Q4101
ALWAYS +5V
Q4002
Q4003
IC4005 LVC550
REG +5V
UNREG
SVR4003
VIDEO CENTER
SVR4002
SLOW ADJ
MOTOR POWER
VOLTAGE REG
IC4005
Q4006
Q4007
F4001
F4002
UNREG ①
IC4303 TA8401
LOADING MOTOR DRIVE
Q4308
Q4307
D4303
MOTOR POWER
Q4303
Q4304
Q4305
MOTOR CLOCK
125kHz
CN4003
BATTERY +
DEW
T/E LED +
REC PROOF
MP/ME
T/S LED
REEL T
REEL S
MODE SW2
MODE SW0
MODE SW1
LOAD −
LOAD +
CASSETTE LOCK
S/S 5V
LPF
PHASE COMP
IC4007
30Hz TRAP
D4001
Q4302
STARTER
UNREG ①
Q4010
S/S5V
PWM DRIVER
LPF
PWM OSC
CN4002
DRUM COMMON
DRUM MOTOR
DRUM(U)
DRUM(V)
DRUM(W)
BRAKE
IB CONTROL
POWER OFF
CW/CCW
EMF DET
Vcc
OVERLOAD DET
EMF MIX
STARTER
IC4302 CX20114
DRUM MOTOR DRIVE
DRUM SENSOR
FG
PG
CN4001
DPG
DCOM
DFG
WAVE SHAPER
DC BIAS
CAPSTAN FG
CN4003
CFG1
CFG2
IC4008 CX20115
SENSOR AMP
TP4002
Q4012
TAPE TOP DET
Q4011
TAPE TOP SENSOR
Q4014
TAPE END DET
Q4013
TAPE END SENSOR
TP4003
MC PWM
SVR4301
MC BIAS
IC4006(1/2)
D4004
BUFFER
IC4006(2/2)
Q4301
UNREG ①
Q4009
Q4008
PWM DRIVER
PWM OSC
CAPSTAN MOTOR
120° LOGIC
HE POWER
IB CONT
LEVEL SHIFT
D4301
CAP(U)
CAP(V)
CAP(W)
VE
VHE +
VHE −
UHE +
UHE −
WHE +
WHE −
HALL ELEMENT
IC4301 CX20036
CAPSTAN MOTOR DRIVE
MOTOR POWER
VHE+
VHE−
UHE+
UHE−
WHE+
WHE−
GCA
MIXER
16kHz BPF
46kHz BPF
REF PILOT
REC PILOT
1/58,1/50,1/36,1/40
5.9MHz OSC
SEL1
SEL2
PEAK DET
S/H B
S/H A
TSB
TSA
SCHMIDT
PB/REC
ATF LOCK
ATF ERROR
IC4202
SCHMIDT
5V
IC4201 CXA1204
ATF DETECTOR
CN4006

3-7. VIEWFINDER BLOCK DIAGRAM



VF1 BOARD
IC9901
AN2510S
VIDEO
GND
VF 5V
SYNC SEP
V. SINC DET
V. OSC
V. DRIVE
VIDEO AMP
MIX
PHASE DET
H. OSC
H. PREDRIVE
17
10
11
7
6
5
1
3
18
13
23
22
24
20
SVR9902
V.SIZE
SVR9901
H. HOLD
SVR9903
CONTRAST
Q9902
H. DRIVE
DY
V
H
CRT
HV
G-1
G-2
G-3
HK
H
T9901
FBT
SVR9905
FOCUS
SVR9904
BRIGHT
HK
HK
H
HV

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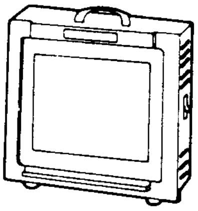
1. CAMERA ADJUSTMENT

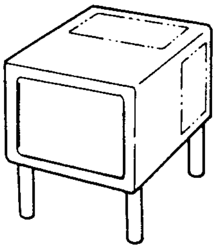
1-1. LIST OF SERVICING JIGS

Ref. No	Name	Part Code	Use
J-1	Color viewer 5100° K	VJ8-0007	Overall
J-2	Halogen viewer 3100° K	VJ8-0019	White balance adjustment
J-3	Gray scale	VJ8-0010	V aperture balance adjustment, AGC level adjustment, iris adjustment
J-4	Color bar chart	VJ8-0009	Color difference level balance adjustment, high luminance chroma suppression adjustment, chroma phase adjustment
J-5	Camera block fixing jig	VJ8-0018	For fixing camera block
J-6	Camera extension cord II	VJ8-0034	For extending camera block
J-7	Socket extractor jig	VJ8-0005/003	For extracting socket
J-8	Pan head	VJ8-0020	To fix camera block
J-9	Filter for white balance adjustment	VJ8-0035	White balance adjustment

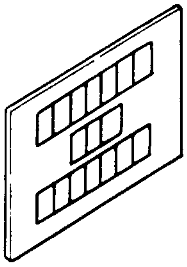
J-1



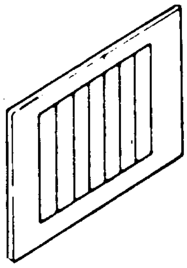
J-2



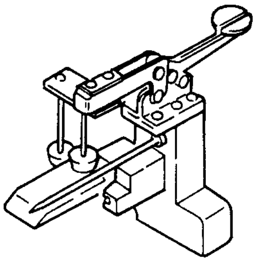
J-3



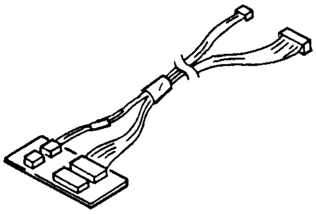
J-4



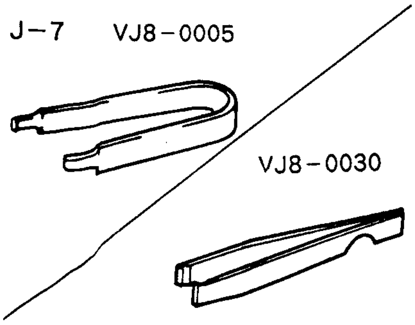
J-5



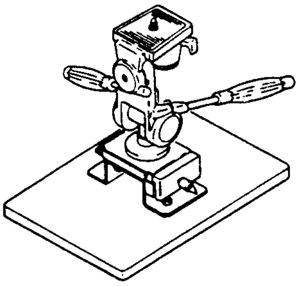
J-6



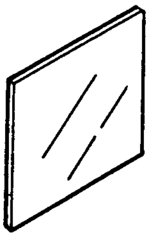
J-7



J-8



J-9



1-2. EQUIPMENT USED

1. Vectorscope (TEKTRONIX. INC No. 520A)
2. Oscilloscope
3. Color monitor TV
4. Digital voltmeter
5. RF adaptor (supplied to this unit)

1-3. ADJUSTMENT ORDER

1. OFD Voltage Adjustment
2. Pedestal Level Adjustment
3. Chroma Pedestal Adjustment
4. Iris Level Adjustment
5. V Aperture Balance Adjustment
6. AGC Level Adjustment
7. Carrier Balance Adjustment
8. White Balance Temporary Adjustment
9. Chroma Balance Adjustment
10. Color Balance Adjustment
11. High Illumination Chroma Suppression Adjustment
12. Aperture Low Level Clipping Adjustment
13. White Balance Adjustment

Note: All adjustments from 1 through 13 must be made.

1-4. SET-UP AND CONNECTION DIAGRAM

Refer to "2. DISASSEMBLY" to remove the cabinets and boards.

1) Place the camera section on jig J-5 as shown in Fig. 1-1.
2) Set up the camera section and color viewer as shown in Fig. 1-2.

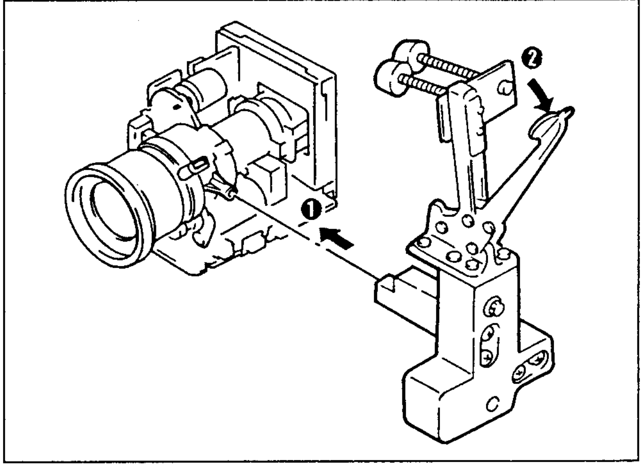


Fig. 1-1.

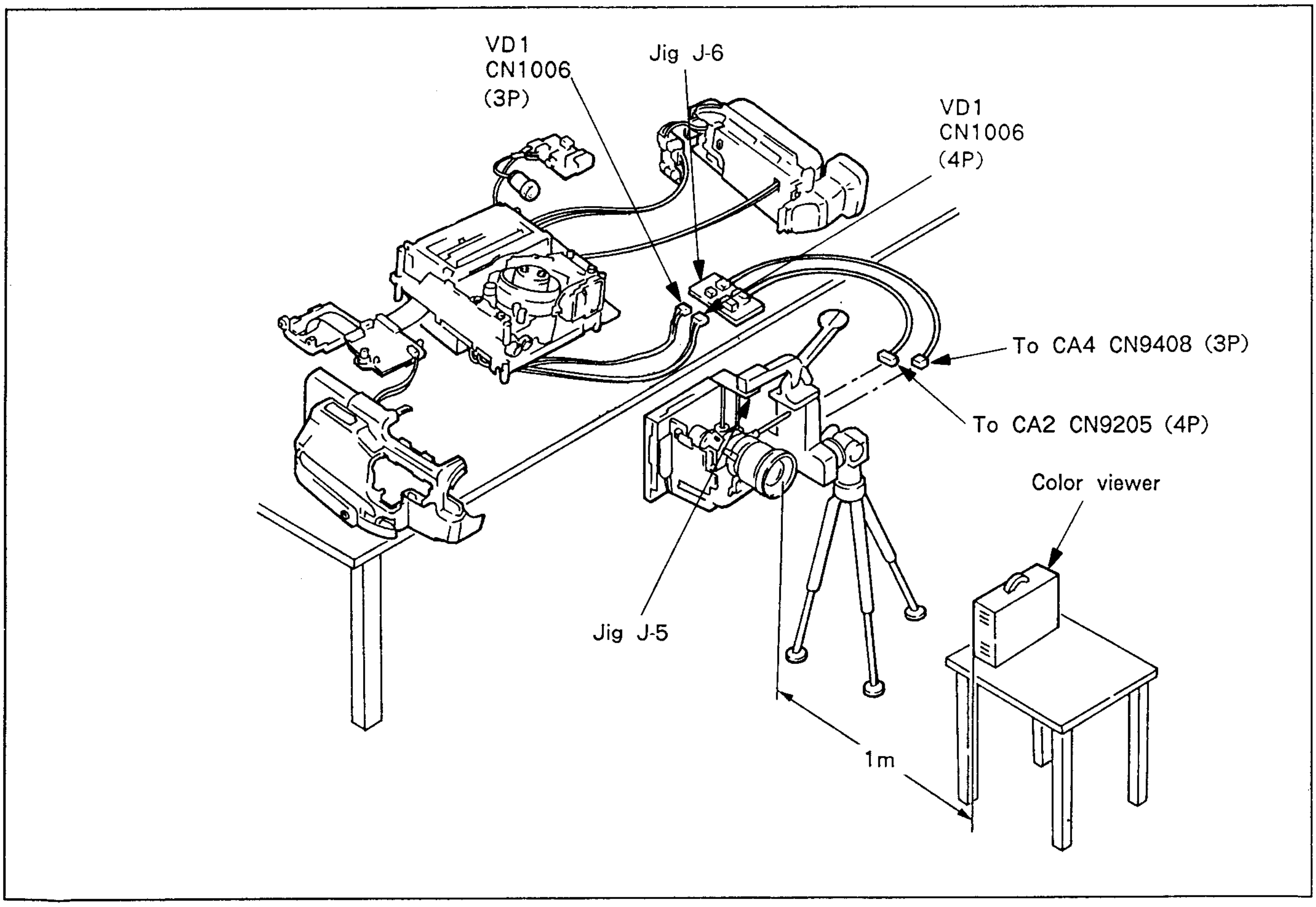
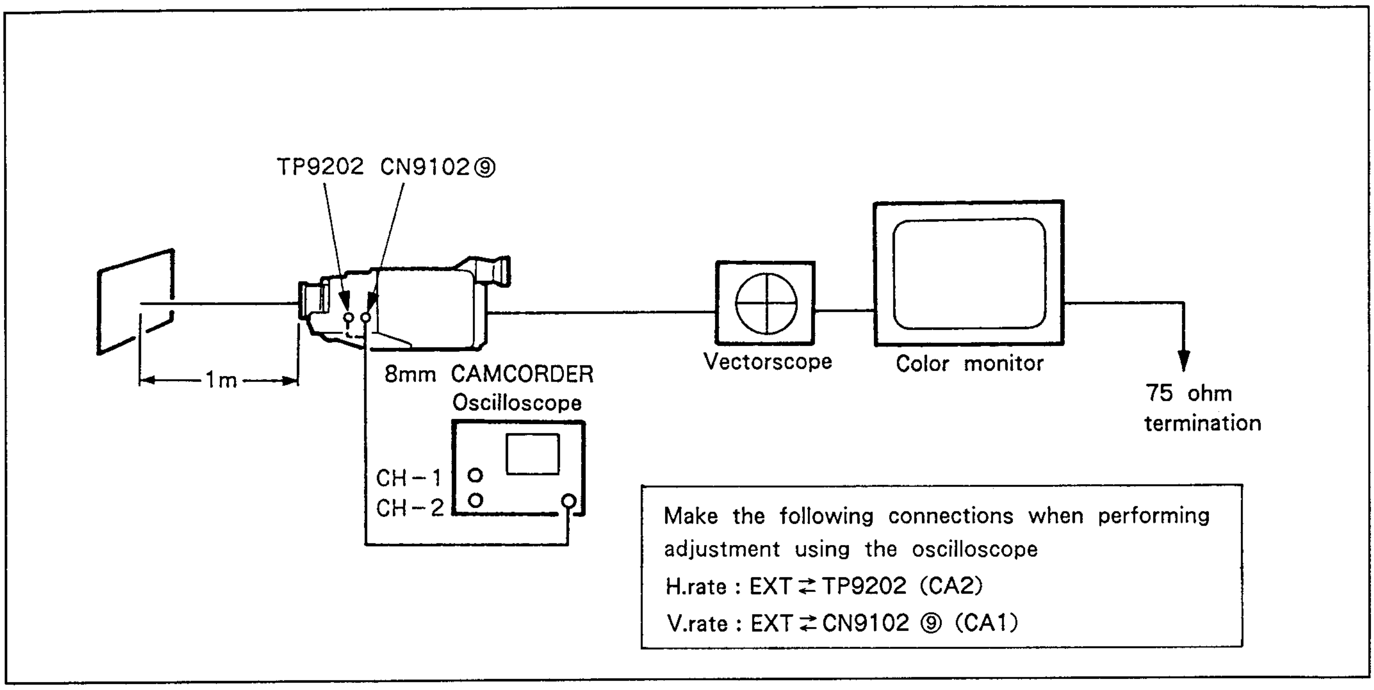


Fig. 1-2.

3) Connection of Equipment


TP9202 CN9102⑨
1m
8mm CAMCORDER
Oscilloscope
CH-1
CH-2
Vectorscope
Color monitor
75 ohm
termination

Make the following connections when performing adjustment using the oscilloscope
H.rate : EXT ⇄ TP9202 (CA2)
V.rate : EXT ⇄ CN9102 ⑨ (CA1)

Fig. 1-3.

1-5. PRECAUTIONS

① The subject is used as light source for 1-6. through 1-17. and the color viewer 5100° K (J-1) is used.

② The picture frame is as shown in Fig. 1-4. unless specified otherwise.

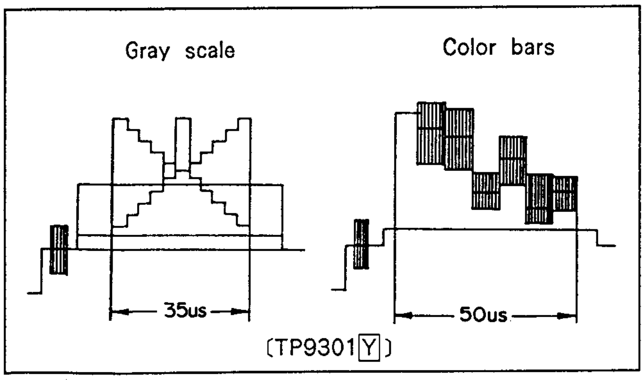

Gray scale
Color bars
35us
50us
(TP9301 Y)

Fig. 1-4a.

③ The standard settings are the focus SW set to manual and the iris SW set to standard.

④ Perform 1-18. after completing all adjustments up to 1-17.

⑤ A warmup period of at least 10 minutes is required for 1-7. to 1-17.

⑥ The center potential of SVR9323 (CA3) should be temporarily adjusted to 3V.

Note : The filter (J-2) for white balance adjustment used for "1-18. White Balance Adjustment" is produced in the following manner.

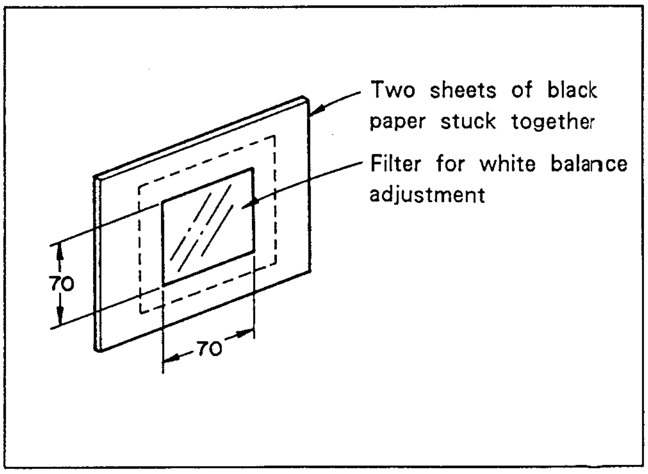

Two sheets of black paper stuck together
Filter for white balance adjustment
70
70

Fig. 1-4b.

1-6. OFD VOLTAGE ADJUSTMENT

Measurement Point : Pin ⑩ of CCD
Measuring Equipment : Digital voltmeter
Adjustment Value :
Set to the voltage value written on the bracket mounting
Indication Method :
Indication is with 2 digits using 0, 1, ··· 9, A, B, ···, F
A : 10, B : 11, C : 12, D : 13, E : 14, F : 15
Example : F0t=15.0V, E3=14.3V
Adjustment VR : SVR9101 OFD

1-7. PEDESTAL LEVEL ADJUSTMENT

Measurement Conditions :
With lens cap attached.
Measuring Equipment : Oscilloscope (H.rate)
Measurement Point : Checker land of near to Pin ㉞ and ㉟ of the IC9301.
Adjustment VR : SVR9201 O.B
Adjustment Method : Adjust so that the video period and blanking period are linear.

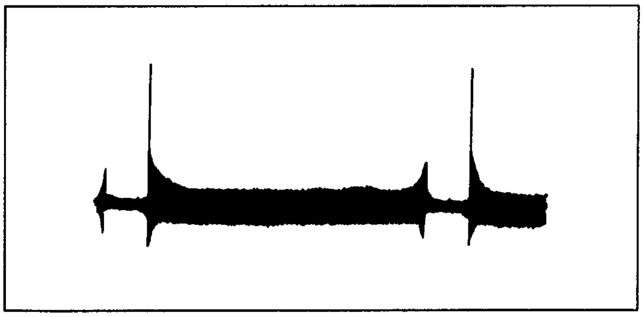


Fig. 1-5.

1-8. CHROMA PEDESTAL LEVEL ADJUSTMENT

Measurement Conditions :
With lens cap attached
Measurement Point : TP9204
Measuring Equipment : Oscilloscope (H.rate)
Adjustment VR : SVR9205
Adjustment Method :
Adjust so that the video period and blanking period are linear.

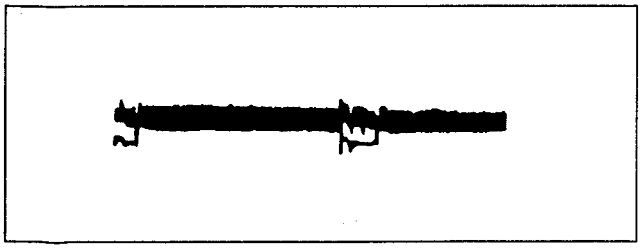


Fig. 1-6

1-9. IRIS LEVEL ADJUSTMENT

Subject : Gray scale
Measuring Equipment : Oscilloscope (H.rate)
Measurement Point : TP9203 IRIS
Adjustment Value : 600mVp-p±20mVp-p
Adjustment VR : SVR9401 IRIS

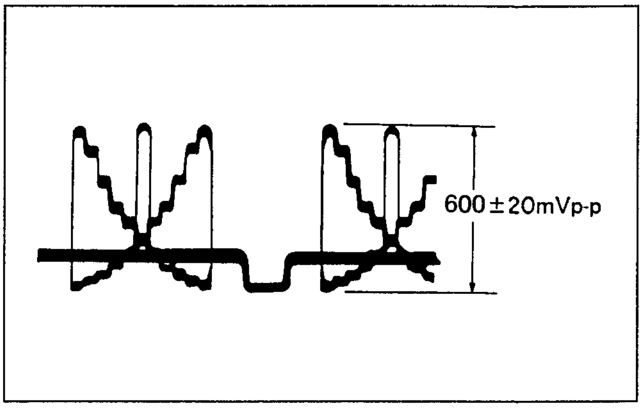


Fig. 1-7.

1-10. V APERTURE BALANCE ADJUSTMENT

Subject : Gray scale
Measuring Equipment : Oscilloscope (V.rate)
Measurement Point : TP9305 VAP
Adjustment VR : SVR9202 VAP BAL
Adjustment Method :
Adjust so that gray scale waveform is minimum.

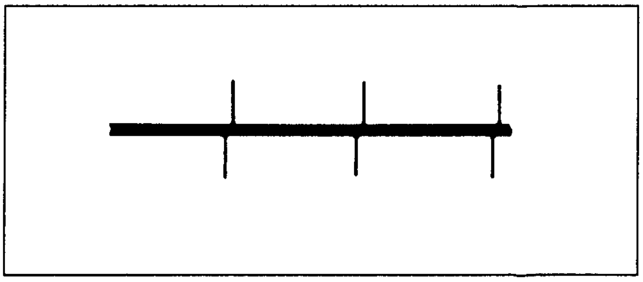


Fig. 1-8.

1-11. AGC LEVEL ADJUSTMENT

Subject : Gray scale
Measuring Equipment : Vectorscope
Measurement Point : Video output
Adjustment Value : 105%±2%
Adjustment VR : SVR9322 AGC.L

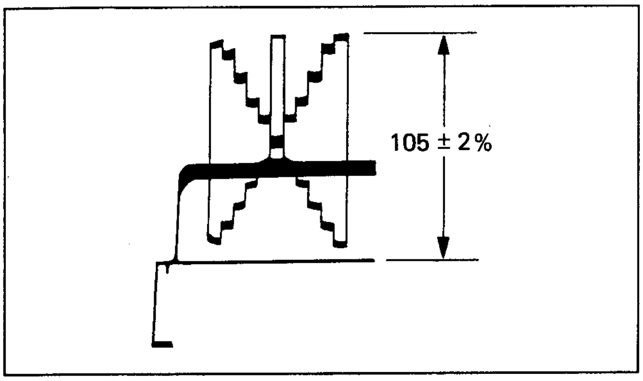


Fig. 1-9.

1-12. PLL LOCK VOLTAGE ADJUSTMENT

Measuring Equipment : Digital voltmeter
Measurement Point : Checker land (right side of VC9101)
Adjustment Value : 2.40V±0.02V
Adjustment VC : VC9101

1-13. CARRIER BALANCE ADJUSTMENT

Measurement Conditions :

① Adjust SVR9303 HI.SUP so that the chroma level is maximum in the video output.
② Raise the gain of the vectorscope until the burst reaches to the outer ring of the vectorscope.
③ Attach the lens cap.

Measuring Equipment : Vectorscope
Measurement Point : Video output
Adjustment VR : SVR9204 SIKISA
SVR9304 R-Y.DC
SVR9305 B-Y.DC

Adjustment Method :

① Adjust SVR9204 SIKISA so that the two luminance points on the vectorscope overlap each other. The flicker should be a minimum at this time.
② Adjust SVR9304 R-Y.DC and SVR9305 B-Y.DC so that the luminance point on the vectorscope is positioned at the origin point (center of vectorscope).

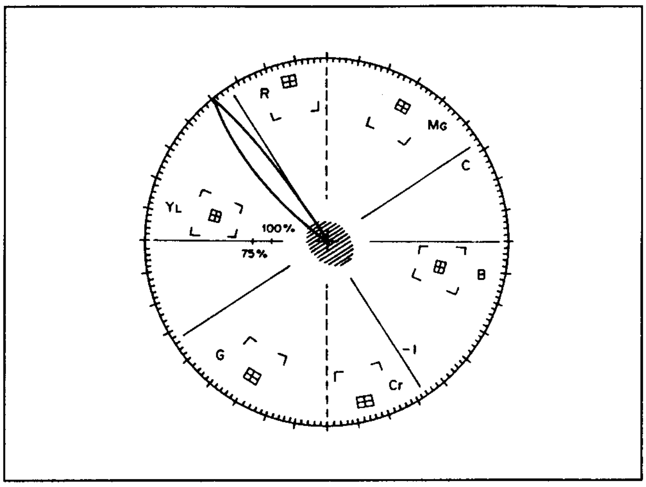


Fig. 1-10.

1-14. WHITE BALANCE TEMPORARY ADJUSTMENT

Subject : Color bars
Measuring Equipment : Vectorscope
Measurement Point : Video output
Adjustment Method :

Adjust so that the white luminance point is positioned at the origin point. (Refer to Fig. 1-12.)

Adjustment VR : SVR9311 WB.OS, SVR9312 WR.OS

1-15. CHROMA BALANCE ADJUSTMENT

Subject : Color bars
Measuring Equipment : Vectorscope
Measurement Point : Video output
Adjustment Method :

Adjust so that the two luminance points overlap each other. The chroma flicker should be a minimum at this time.(Refer to Fig. 1-12.)

Adjustment VR : SVR9203 C.BALANCE

1-16. BURST LEVEL AND PHASE ADJUSTMENTS

Setting : Set the line selector of the vectorscope to BOTH.
Measuring Equipment : Vectorscope, Oscilloscope (H. rate)
Measurement Point : Video output, TP9302 C
Adjustment Method :

① Adjust SVR9306 so that the bursts with different phase have a 90° phase difference.
② Adjust with SVR9307 so that the burst level is 300mVp-p±10mV at TP9302.
③ Adjust the gain VR of the vectorscope so that the burst level is 75% on the vectorscope.

Adjustment VRs : SVR9306 BS.PH
SVR9307 BS.G

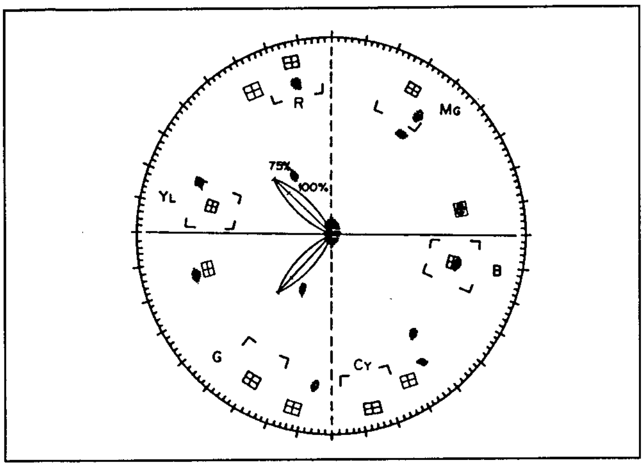


Fig. 1-11.

1-17. CHROMA PHASE ADJUSTMENT

Measurement Conditions :

① Attach the lens cap and confirm that the juminance point on the vectorscope is positioned at the origin point.
(SVR9304 R-Y.DC, SVR9305 B-Y.DC)

② Record the color bars and confirm that the white luminance point on the vectorscope is positioned at the origin point.
(SVR9311 WB.OS, SVR WR.OS)

Sugject : Color bars
Measuring Equipment : Vectorscope
Adjustment Method :

① Set the line select switch of the vectorscope to "+V".

② Adjust so that the luminance points which indicate red and blue on the vectorscope are at the positions shown in Fig. 1-12.

Adjustment VRs : SVR9301 B-Y.G
SVR9302 R-Y.G
SVR9206 B-Y.MAT
SVR9321 R-Y.MAT

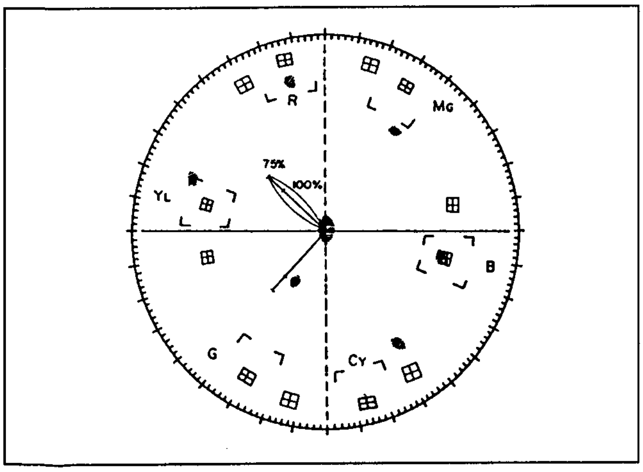


Fig. 1-12.

1-18. HIGH LUMINANCE CHROMA SUPPRESSION ADJUSTMENT

Subject : Color bars
Measuring Equipment : Vectorscope
Measurement Point : Video output
Adjustment Method :

① Set the line select switch of the vectorscope to "+V".

② Adjust so that the luminance point which indicates yellow on the vectorscope is at the position shown in Fig. 1-13.

Adjustment VR : SVR9303 HI.SUP

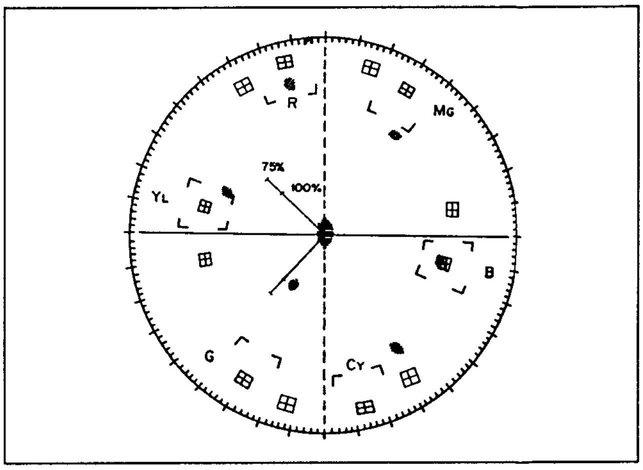


Fig. 1-13.

1-19. WHITE BALANCE ADJUSTMENT

*Setting
- Connect TP9306 and TP9307 to GND.
- Set SVR9315 WB.G and SVR9316 WR.G to their center positions.
- Set SVR9319 HLI to the position shown in Fig. 1-14.

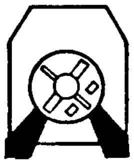


Fig. 1-14.

- Adjust the gain control of the vectorscope so that the burst length on the vectorscope becomes 5cm.

*Adjustment Method

(I) **Center Adjustment**

① Record the 5100° K viewer (J-1).

② Use SVR9311 WB.OS and SVR9312 WR.OS to adjust so that the luminance point of the vectorscope is at the ⊕ position as shown in Fig. 1-15.

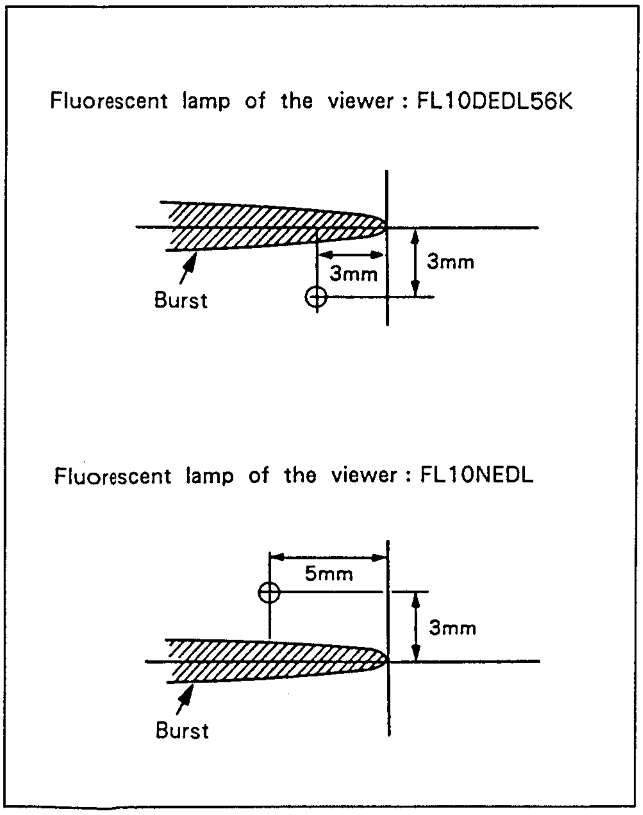

Fluorescent lamp of the viewer : FL10DEDL56K
3mm
3mm
Burst
Fluorescent lamp of the viewer : FL10NEDL
5mm
3mm
Burst

Fig. 1-15.

(II) **Sensor Adjustment**

① Record the 5100° K viewer (J-1) so that only light from the viewer enters the sensor.

② Disconnect TP9307 from GND.

③ Use SVR9317 WB.BIAS and SVR9318 WR.BIAS to adjust so that the luminance point of the vectorscope is at the ⊕ position as shown in Fig. 1-16.

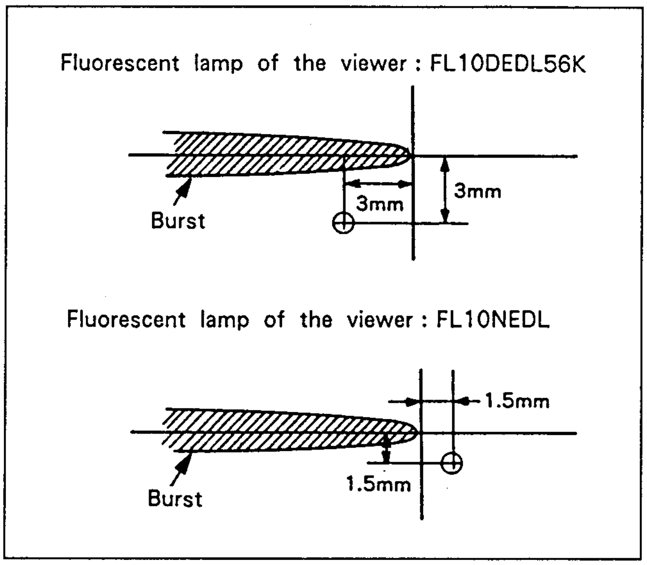

Fluorescent lamp of the viewer : FL10DEDL56K
3mm
3mm
Burst
Fluorescent lamp of the viewer : FL10NEDL
1.5mm
1.5mm
Burst

Fig. 1-16.

④ Record the 3100° K viewer (J-2) so that only light from the viewer enters the sensor.

⑤ Use SVR9315 WB.G and SVR9316 WR.G to adjust so that the luminance point of the vectorscope is at center.

(III) **TTL Adjustment**

① Record the 3100° K viewer (J-2).

② Disconnect TP9306 and TP9307 from GND.

③ Use SVR9313 TWBR.OS and SVR9314 TWBB.OS to adjust so that the luminance point of the vectorscope is at center.

(IV) **HLI Adjustment**

*Setting

① Place the jig (J-9) over the 3100° K viewer (J-2) and record.

② Confirm that TP9306 and TP9307 are disconnected from GND.

③ Connect the oscilloscope to TP9307. (H.rate)

1-20. APERTURE LOW LEVEL CLIP ADJUSTMENT

Measurement Condition :

All white pattern ; set the lens fully to TELE side.

Adjustment Method :

Adjust to the optimum screen image while monitoring.

Adjustment VR : SVR9323 LLC

2. MECHANISM ADJUSTMENT

2-1. CASSETTE ARM ASSEMBLY (Refer to Fig. 2-1.)

1. Removal

1) Remove the screws ❶, ❷, ❸, and ❹.
2) Remove the tape guard assembly ❺.
3) Remove the cassette arm assembly ❻.

2. Remounting

1) Attach the cassette arm assembly ❻ so that the two pins ❼ are at the prescribed locations.
2) Attach the tape guard assembly ❺, partially tighten the screws ❶ and ❷, and tighten the screws ❸ and ❹.
3) Tighten the screws ❶ and ❷.

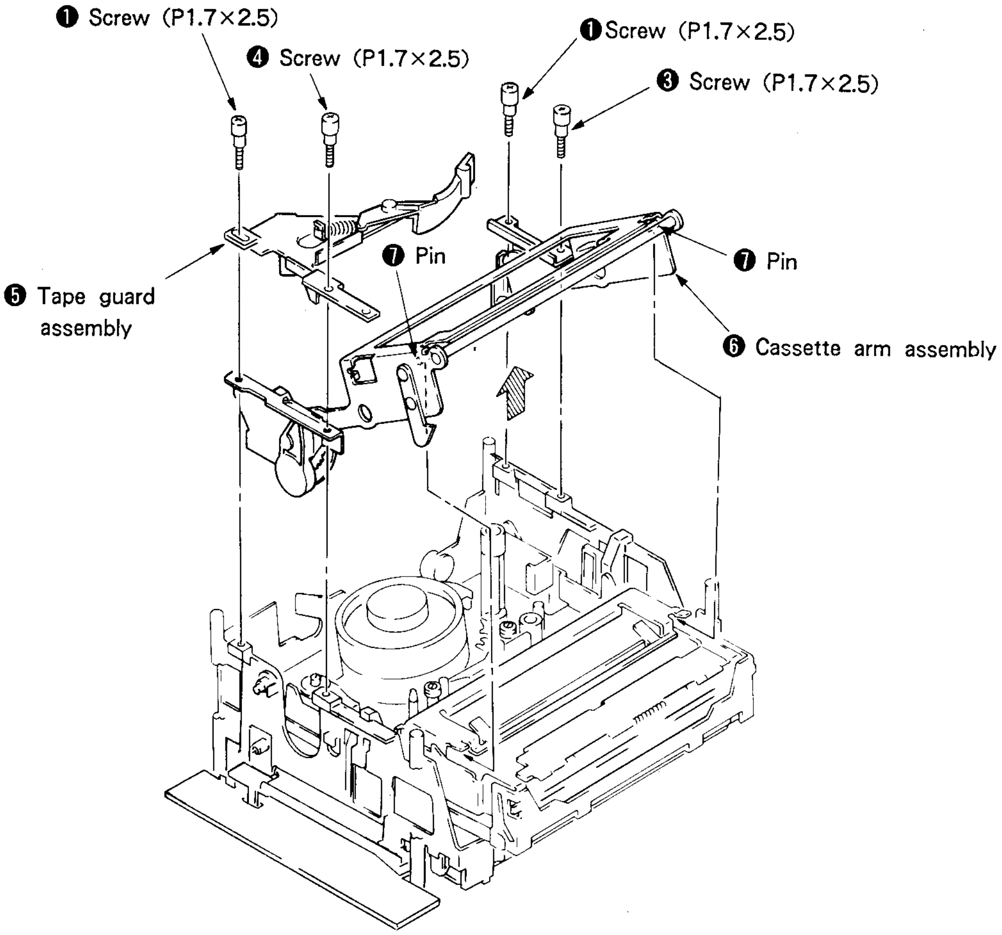

❶ Screw (P1.7×2.5)
❹ Screw (P1.7×2.5)
❶Screw (P1.7×2.5)
❸ Screw (P1.7×2.5)
❼ Pin
❼ Pin
❺ Tape guard assembly
❻ Cassette arm assembly

Fig. 2-1

2-2. LS CASSETTE COMPARTMENT ASSEMBLY (Refer to Fig. 2-2)

1. Removal

1) Remove the screws ❶, ❷, ❸, and ❹.
2) Push the hole ❽ of the LS frame ❻ in the direction of the arrow 🅐, and remove the two pins ❺ and ❾. (Begin removal from pin (B) ❾ as pin (C) ❺ is longer.)
3) Remove the LS cassette compartment assembly ❼.

2. Remounting

1) Remount the LS cassette compartment assembly ❼ on the main unit.
2) Push the hole ❽ of the LS frame ❻ in the direction of the arrow 🅐, and insert two pins ❺ and ❾. (Insert pin (C) ❺ first as pin (C) ❺ is longer.)
3) Partially tighten the screws ❸ and ❹ and tighten the screws ❶, ❷, ❸, and ❹ in this order.

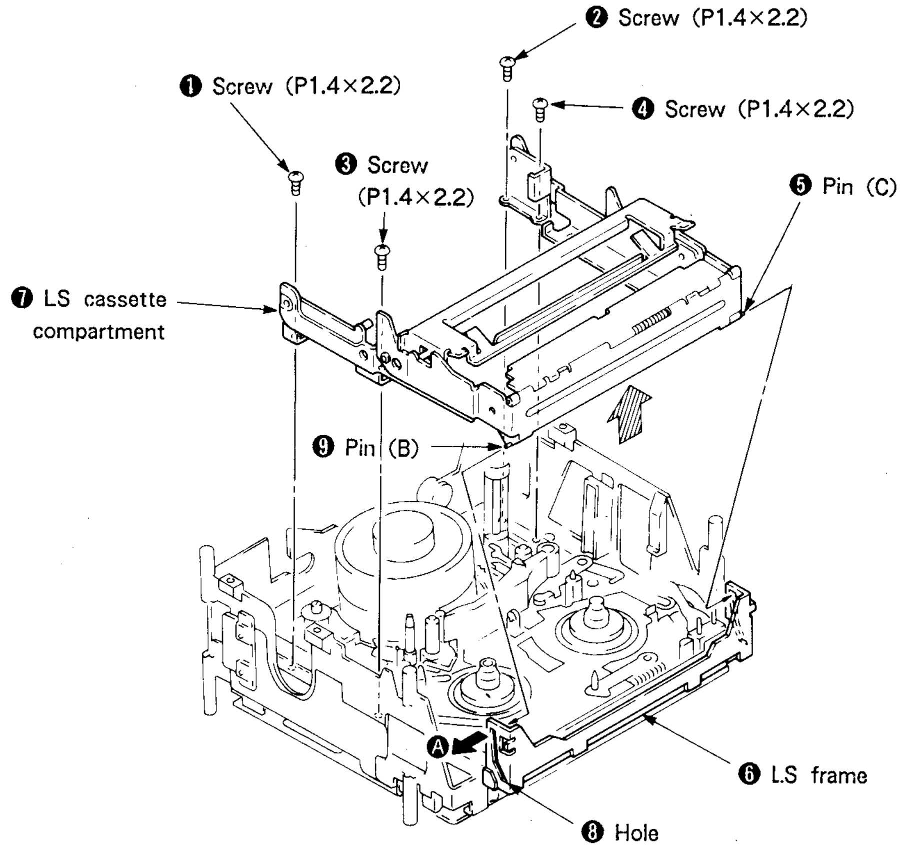

❷ Screw (P1.4×2.2)
❶ Screw (P1.4×2.2)
❹ Screw (P1.4×2.2)
❸ Screw (P1.4×2.2)
❺ Pin (C)
❼ LS cassette compartment
❾ Pin (B)
🅐
❻ LS frame
❽ Hole

Fig. 2-2

2-3. REMOVING CASSETTE TAPE FROM LOADING STATE

1) Perform the following with the boards on the rear of the mechanism chassis open.
2) Refer to 2-5, and connect the mode selector.

Note : The mode shown in ☐ below is the mode set by pressing the buttons of the mode selector.

3) Set to the GUIDE LOAD mode and move the tape guides from the positions shown in Fig. 2-4. to the positions shown in Fig. 2-5.
4) Rotate the rotor section ❶ of the capstan motor in the direction of the arrow to wind up the tape within the cassette. (Refer to Fig. 2-3.)

Note : Even when the GUIDE LOAD mode is selected, it will be impossible to wind up the tape if the tape guides are closer to cassette side than indicated in Fig. 2-5.

5) After confirming that the tape is fully wound up, select the EJECT mode to eject the cassette.

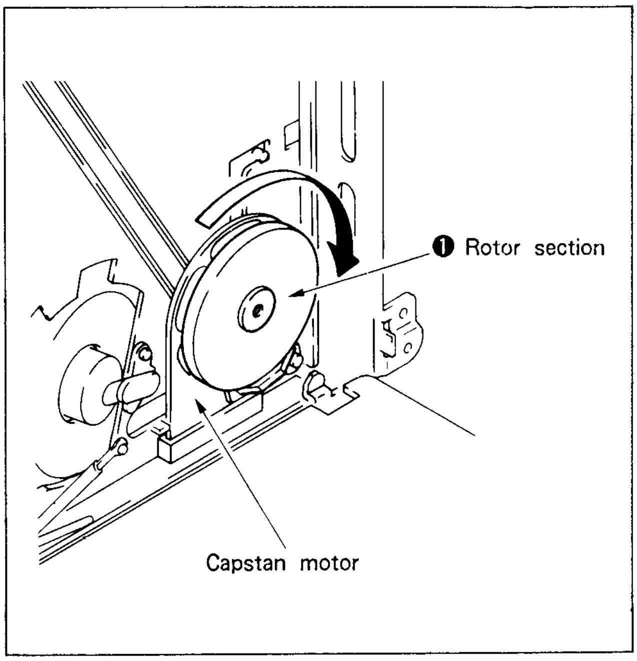

❶ Rotor section
Capstan motor

Fig. 2-3

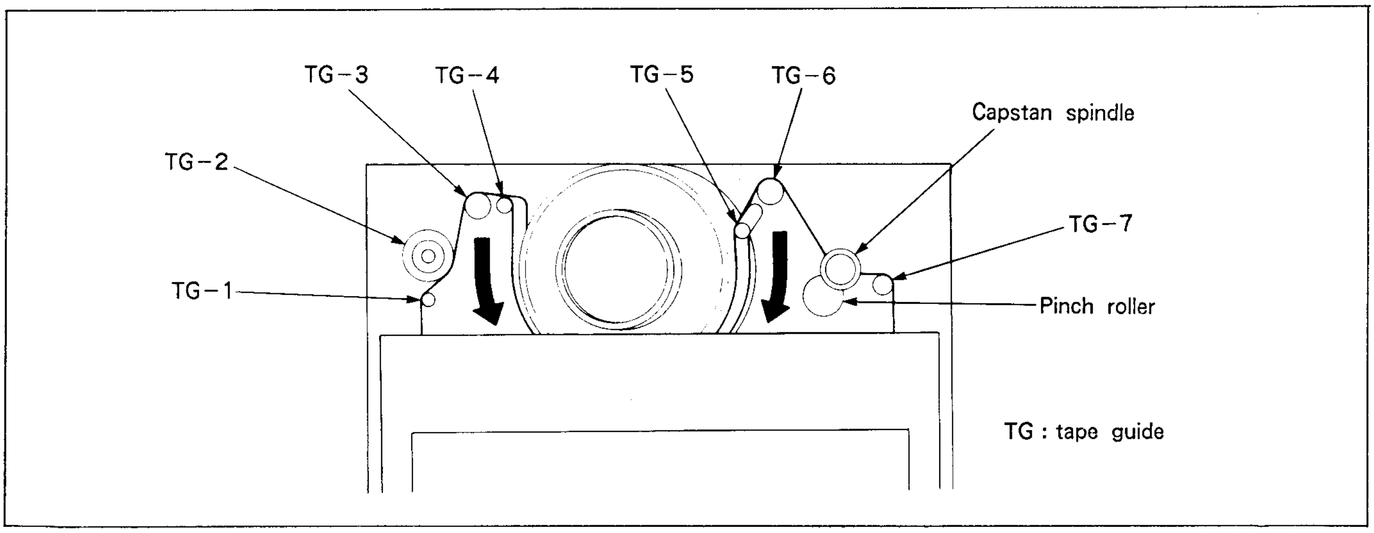

TG-3
TG-4
TG-5
TG-6
Capstan spindle
TG-2
TG-7
TG-1
Pinch roller
TG : tape guide

Fig. 2-4

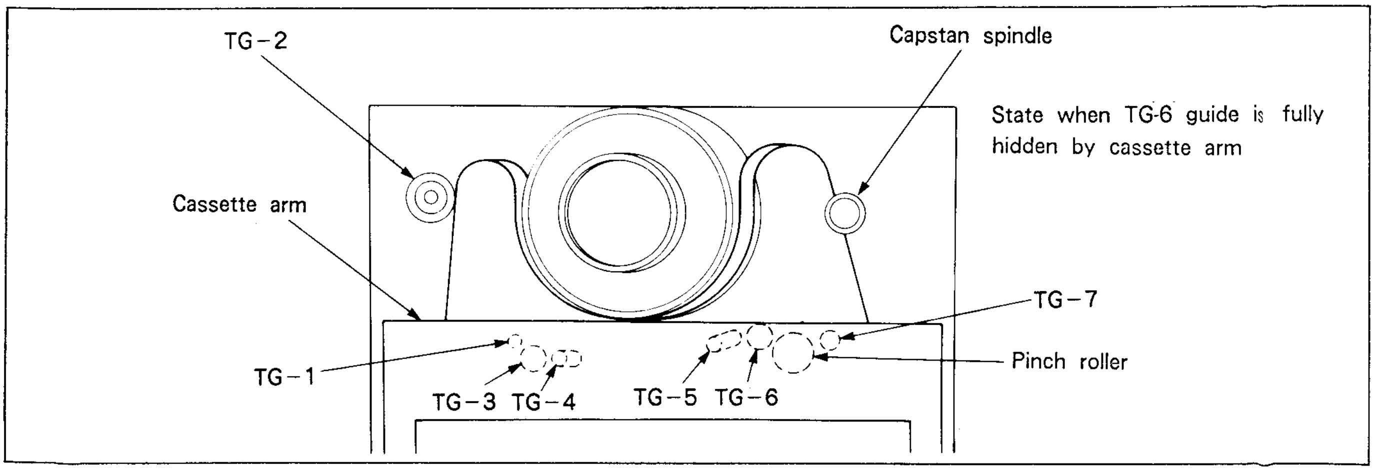

TG-2
Capstan spindle
State when TG-6 guide is fully hidden by cassette arm
Cassette arm
TG-7
Pinch roller
TG-1
TG-3
TG-4
TG-5
TG-6

Fig. 2-5

2-4. OPERATING WITHOUT CASSETTE, CASSETTE ARM ASSEMBLY, AND LS CASSETTE COMPARTMENT ASSEMBLY

1. Loading (Refer to Fig. 2-6.)

1) Supply power with the cabinet and camera section removed.
(This allows operation of mechanism deck.)
2) Place the cap ❷ over the LED assembly ❶.
3) Push the pin of the push SW ❸ (ON) and fix in place with adhesive tape ❹.
4) The set will be set to the loading state by pushing the return prevention arm ❺ in the direction of the arrow Ⓐ.

2. Recording

1) After completing 1., turn ON the power SW of the unit.
2) Turn ON the REC SW.

3. Ejecting

1) Turn ON the EJECT SW.

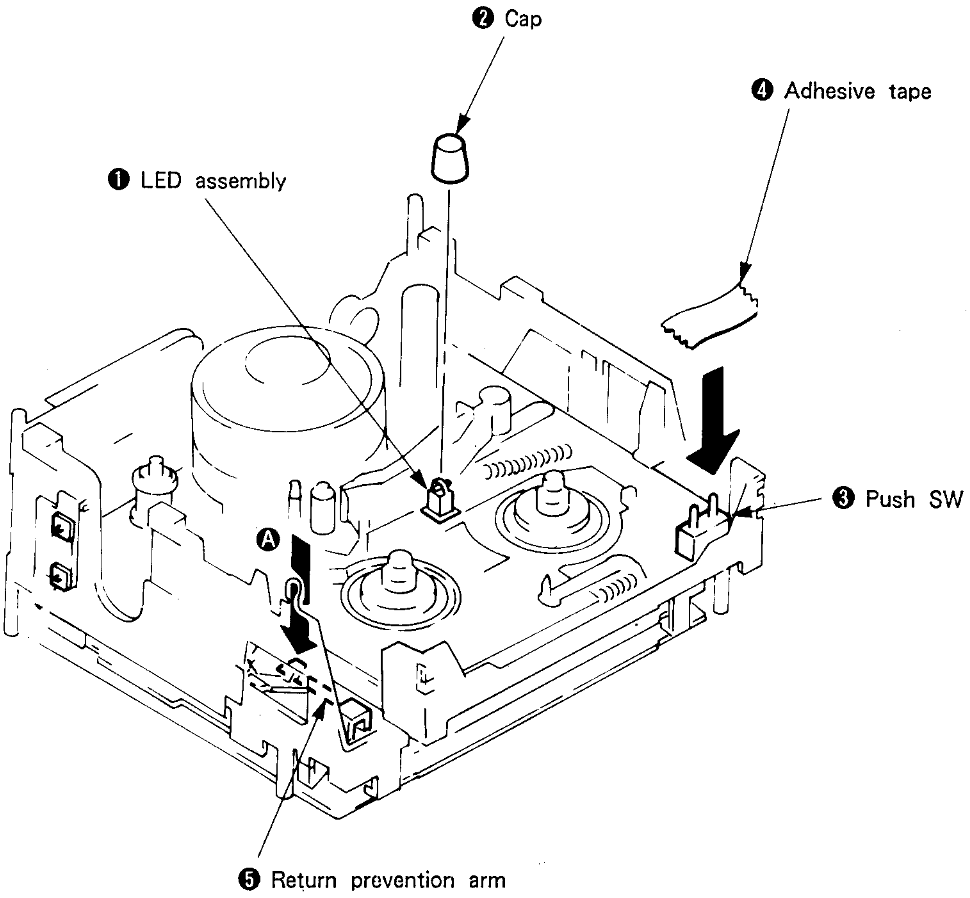

❷ Cap
❹ Adhesive tape
❶ LED assembly
Ⓐ
❸ Push SW
❺ Return prevention arm

Fig. 2-6

2-5. OPERATION OF MODE SELECTOR

- Attach the MODE SELECTOR II panel. (Refer to Fig. 2-7.)

2-5-1. Name of Parts (Refer to Fig. 2-8.)

2-5-2. Connection (Refer to Fig. 2-9.)

1) Remove the flexible board using a standard screwdriver or similar tool.

Note : When removing the flexible board, do not pull the board by hand. Pulling with excessive force may cause damage to the pattern.

2) Insert the MODE SELECTOR II conversion connector (J-14).
3) Connect the MODE SELECTOR II conversion connector to the M-SW connector.

2-5-3. Operation

1) Be sure to use only the M mode selector buttons.
2) "BLANK" of the selectors is illuminated when there is no mode states.
3) Hold down the right M mode selector button. Illumination changes from EJECT to USE to GUIDE LOAD to REC to READY.
4) The button on the left is pressed to move from READY to EJECT for selecting the desired mode.

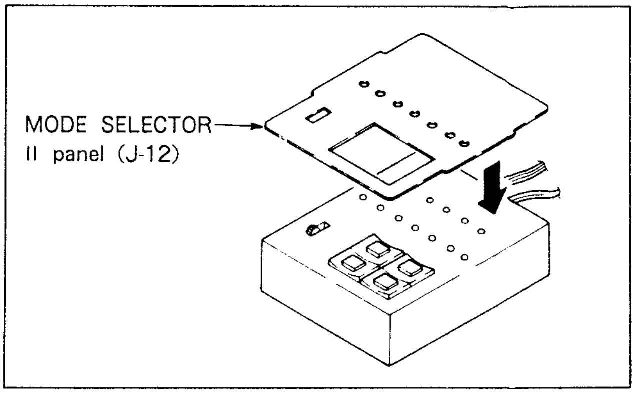

MODE SELECTOR
II panel (J-12)

Fig. 2-7

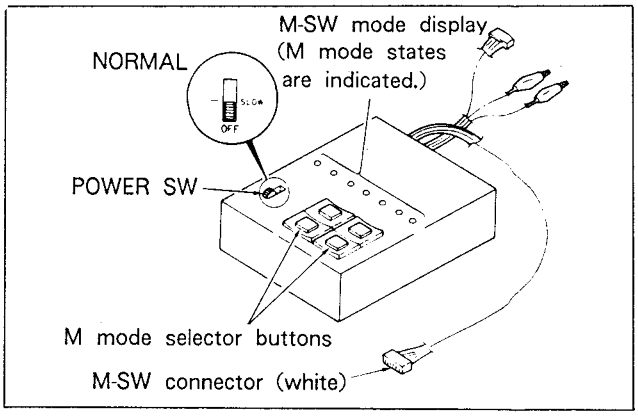

M-SW mode display
(M mode states
are indicated.)
NORMAL
SLOW
OFF
POWER SW
M mode selector buttons
M-SW connector (white)

Fig. 2-8

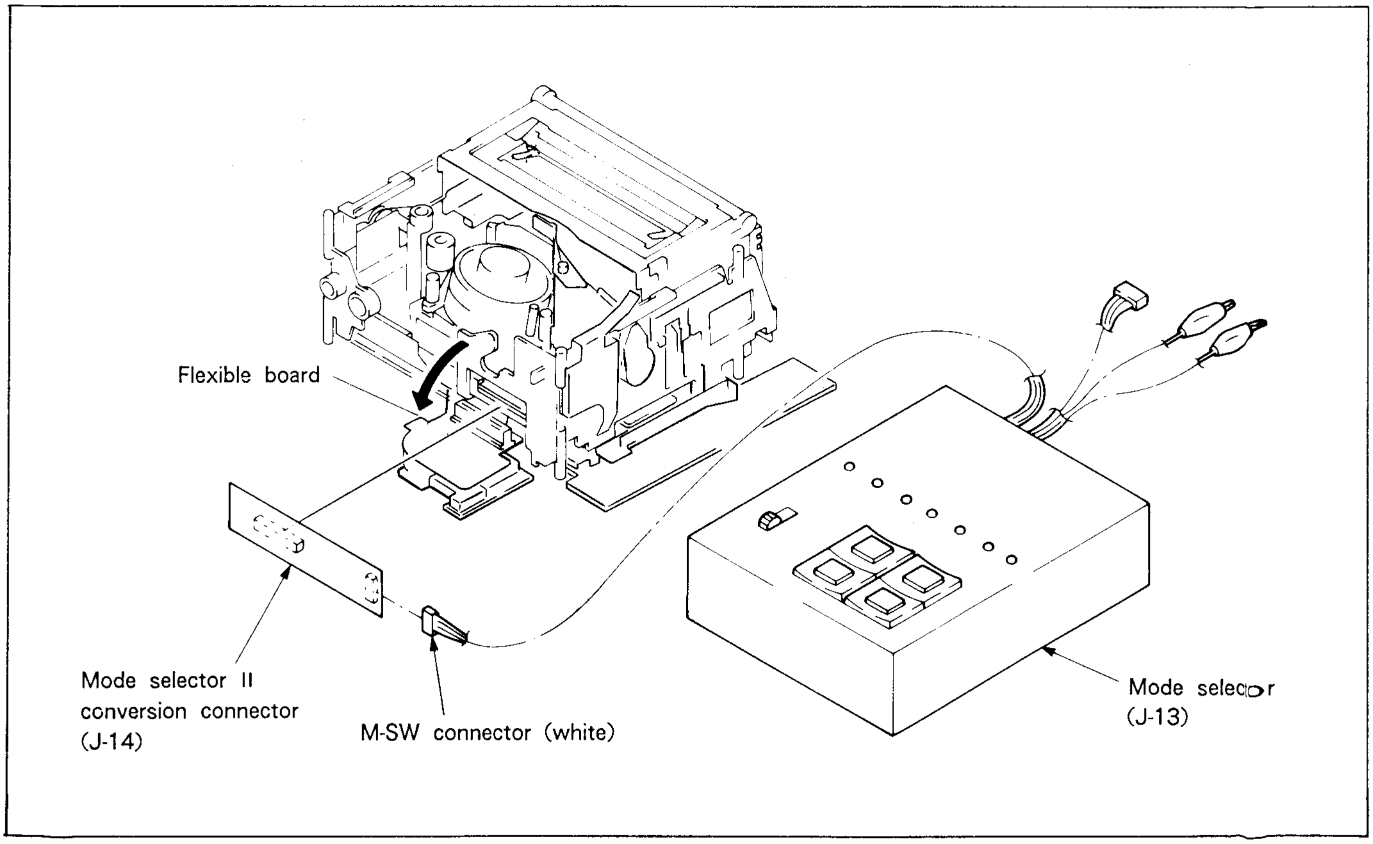
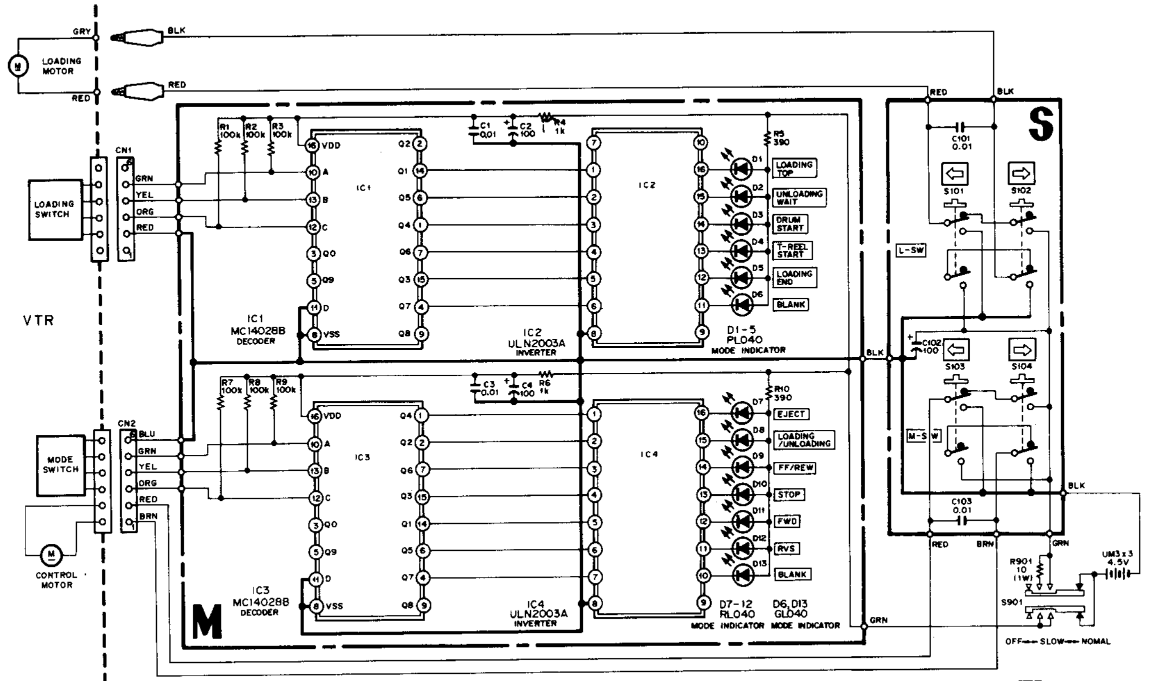

Flexible board
Mode selector II
conversion connector
(J-14)
M-SW connector (white)
Mode selector
(J-13)

Fig. 2-9

2-5-4. Mode Selector Circuit Diagram


GRY
BLK
LOADING MOTOR
RED
CN1
GRN
YEL
ORG
RED
LOADING SWITCH
VTR
CN2
BLU
GRN
YEL
ORG
RED
BRN
MODE SWITCH
CONTROL MOTOR
R1 100k
R2 100k
R3 100k
C1 0.01
C2 100
R4 1k
R5 390
IC1
IC1 MC14028B DECODER
IC2
IC2 ULN2003A INVERTER
D1-5 PL040 MODE INDICATOR
LOADING TOP
UNLOADING WAIT
DRUM START
T-REEL START
LOADING END
BLANK
R7 100k
R8 100k
R9 100k
C3 0.01
C4 100
R6 1k
R10 390
IC3
IC3 MC14028B DECODER
IC4
IC4 ULN2003A INVERTER
D7-12 RL040 MODE INDICATOR
D6, D13 GL040 MODE INDICATOR
EJECT
LOADING /UNLOADING
FF/REW
STOP
FWD
RVS
BLANK
M
S
C101 0.01
S101
S102
L-SW
C102 100
S103
S104
M-SW
C103 0.01
RED
BLK
BRN
GRN
R901 10 (1W)
UM3 x 3 4.5V
S901
OFF — SLOW — NOMAL

M-SW (IC3)

DECODER INPUT			MODE	LED NO.
C	B	A		
0	0	0		
0	0	1	FWD	D11
0	1	0	LOADING /UNLOADING	D8
0	1	1	STOP	D10
1	0	0	EJECT	D7
1	0	1	RVS	D12
1	1	0	FF/REW	D9
1	1	1	BLANK	D13

0 : INPUT LEVEL L
1 ; INPUT LEVEL H

L-SW (IC1)

DECODER INPUT			MODE	LED NO.
C	B	A		
0	0	0		
0	0	1	LOADING TOP	D1
0	1	0		
0	1	1	LOADING END	D5
1	0	0	DRUM START	D3
1	0	1	UNLOADING WAIT	D2
1	1	0	T-REEL-START	D4
1	1	1	BLANK	D6

SWITCH ⇦	SWITCH ⇨	DIRECTION OF MOTOR REVOLUTION
OFF	OFF	STOP
ON	OFF	⇦
OFF	ON	⇨

⇦ L-SW LOADING END ← LOADING TOP
M-SW RVS ← EJECT

⇨ L-SW LOADING TOP ← LOADING END
M-SW EJECT ← RVS

2-5-5. Mode Selector Parts List

Ref. No.	Part No.	Description		
	CAPACITORS			
C1	1-108-579-00	MYLAR	0.01μF	50V
C2	1-123-333-00	ELECT	100μF	24V
C3	1-108-579-00	MYLAR	0.01μF	50V
C4	1-123-333-00	ELECT	100μF	24V
C101	1-108-579-00	MYLAR	0.01μF	50V
C102	1-123-333-00	ELECT	100μF	24V
C103	1-108-579-00	MYLAR	0.01μF	50V
	DIODE			
D1	8-719-812-31	DIODE TLR123		
D2	8-719-812-31	DIODE TLR123		
D3	8-719-812-31	DIODE TLR123		
D4	8-719-812-31	DIODE TLR123		
D5	8-719-812-31	DIODE TLR123		
D6	8-719-812-33	DIODE TLG123A		
D7	8-719-812-31	DIODE TLR123		
D8	8-719-812-31	DIODE TLR123		
D9	8-719-812-31	DIODE TLR123		
D10	8-719-812-31	DIODE TLR123		
D11	8-719-812-31	DIODE TLR123		
D12	8-719-812-31	DIODE TLR123		
D13	8-719-812-33	DIODE TLG123A		

Ref. No.	Part No.	Description		
	IC			
IC1	8-759-240-28	IC TC4028BP		
IC2	8-759-120-03	IC μPA2003C		
IC3	8-759-240-28	IC TC4028BP		
IC4	8-759-120-03	IC μPA2003C		
	RESISTORS			
R1	1-247-179-00	CARBON	100K	1/4W
R2	1-247-179-00	CARBON	100K	1/4W
R3	1-247-179-00	CARBON	100K	1/4W
R4	1-247-131-00	CARBON	1K	1/4W
R5	1-247-121-00	CARBON	390	1/4W
R6	1-247-131-00	CARBON	1K	1/4W
R7	1-247-179-00	CARBON	100K	1/4W
R8	1-247-179-00	CARBON	100K	1/4W
R9	1-247-179-00	CARBON	100K	1/4W
R10	1-247-121-00	CARBON	390	1/4W
R901	1-214-594-00	METAL	10	1W

2-6. PERIODIC CHECKING AND MAINTENANCE ITEMS

- Maintenance and periodic checking should be performed as described below to demonstrate the set functions and performance fully, as well as for the sake of the machine and tapes. Provide the following maintenance work after a repair regardless of the duration of operation by the user.

2-6-1. Cleaning Rotary Drum Assembly

1) Lightly place chamois leather (Ref. No.J-2) moistened with a cleaning solution (Ref. No.J-1) on the rotary drum assembly and slowly rotate the rotary upper drum assembly counterclockwise by finger to clean.

Note : Do not rotate the drum by the motor by turning on the power or by rotating clockwise by finger. The chances of the head chip being damaged are very high if chamois leather is moved perpendicular to the head chip. Absolutely no cleaning method other than that described above should be used.

2-6-2. Tape Path System Cleaning (Refer to Fig. 2-10.)

1) Set up the cassette compartment assembly in the eject state and clean the tape running system (TG-1, 2, 3, 4, 5, 6, 7, pinch roller, capstan spindle) with chamois leather moistened with a cleaning solution.

Note : Be careful that no oil or grease from the individual link mechanisms adheres to the chamois leather.

2-6-3. Drive System Cleaning

1) Clean the drive system (timing belt and reel table surfaces) with a cloth moistened with a cleaning solution.

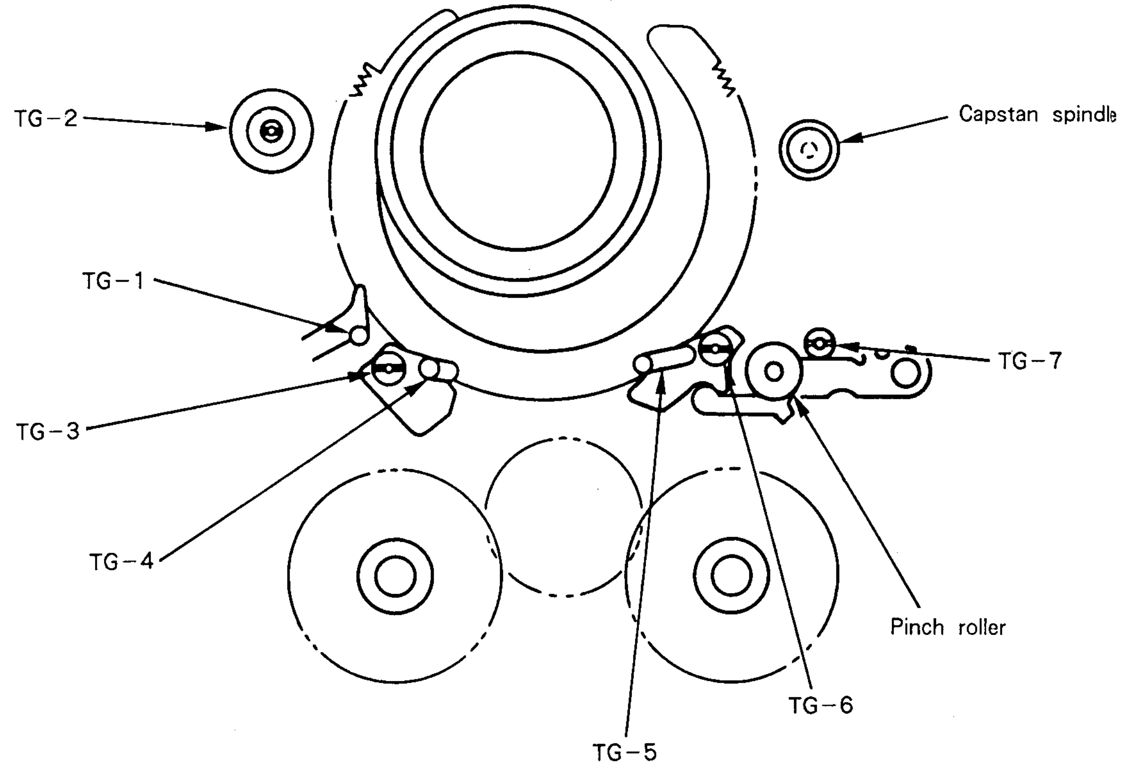


Fig. 2-10

2-6-4. Periodic Check Items

Maintenance and Check Part		Hours in Operation (H)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
	Cleaning of tape running surfaces	○	○	○	○	○	○	○	○	○	○	Avoid oil
	Cleaning and demagnetizing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Avoid oil
Drive system	Timing belt	–	☆	–	☆	–	☆	–	☆	–	☆	
	Capstan spindle	–	◎	–	◎	–	◎	–	◎	–	◎	Absolutely avoid oil on tape running surfaces
	Timing pulley spindle	–	◎	–	◎	–	◎	–	◎	–	◎	
	Loading motor	–	☆	–	☆	–	☆	–	☆	–	☆	
Performance checking	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	–	☆	–	☆	–	☆	–	☆	–	☆	
	Brake system	–	☆	–	☆	–	☆	–	☆	–	☆	
	FWD, RVS torque measurement	–	☆	–	☆	–	☆	–	☆	–	☆	

○ Cleaning ◎ Lubrication ☆ Confirmation

Note : Replace parts during overhaul taking above items into consideration.

Note : SANYO oil

- Be sure to always use SANYO oil.
  (Various kinds of trouble may occur is the oil viscosity, etc., change.)
  SANYO Oil : Parts No.7-661-088-61
  (Mitsubishi Diamond Oil Hydro-fluid NT-68)
- Be sure to use SANYO oil completely free from dust, etc., mixed in it when oiling the bearings.
  (The bearings may wear and may seize up if oil mixed with dust, etc., is used.)
- One drop of oil is approximately the amount of oil on the tip of a stick 2mm in diameter as shown in the diagram. (Refer to Fig. 2-11.)

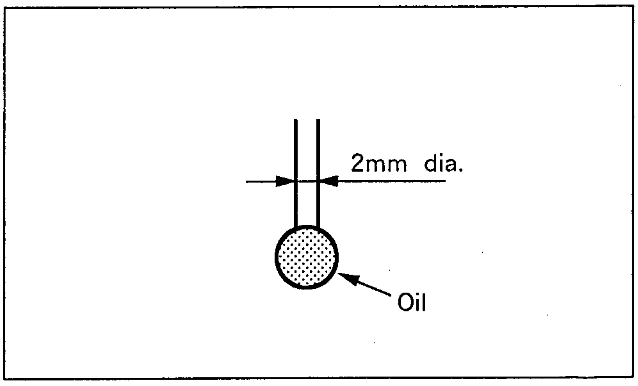


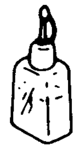
Fig. 2-11

2-6-5. Summary of Servicing Tools

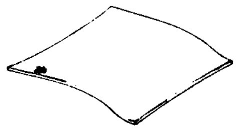
Ref No.	Name	Part Code	Fixture No.	Use, etc.
J-1	Cleaning fluid	Y-2031-001-1	——	
J-2	Chamois leather	2-034-697-00	——	
J-3	Head demagnetizer	Commercially available	——	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape (WR5-1C)	8-967-995-06		Tape path
J-6	Dial tension gauge	J-6080-827-A		Various torque measurements
J-7	Tension measuring reel	J-6080-831-A		With ϕ 30 tape
J-8	Tension measuring reel	J-6080-832-A		With ϕ 16 string
J-9	FWD, RVS take-up torque cassette	J-6080-824-A	GD-2086	
J-10	Rotary drum jig	(Packed with the rotary upper drum for repair)		
J-11	Tape path screwdriver	J-6080-811-A		Tape guide adjust
J-12	Mode selector II panel	J-6080-844-A		
J-13	Mode selector	J-6080-825-A		Entire unit
J-14	Mode selector II conversion connector	J-6080-845-A		
J-15	Tape end detection filter	J-6080-848-A		Tape end detection adjustment
J-16	Shift track jig	VJ8-0029	——	Tape path

Other equipment :
- Oscilloscope
- Analog Tester (20k Ω)

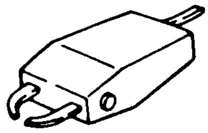
J-1



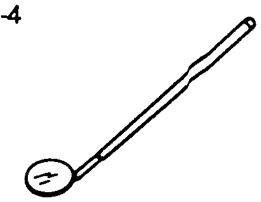
J-2



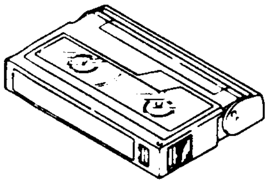
J-3



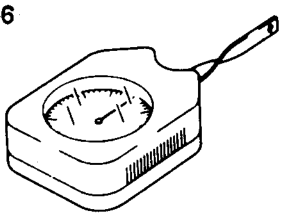
J-4



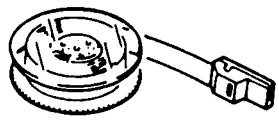
J-5



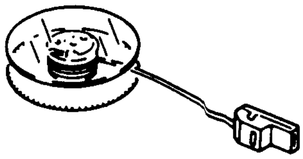
J-6



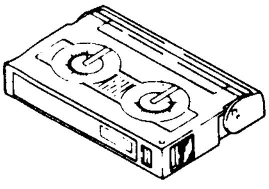
J-7



J-8

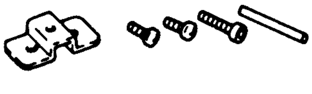


J-9

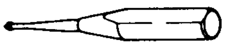


J-10

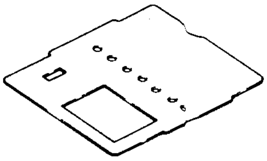
(Packed with the rotary upper drum for repair)



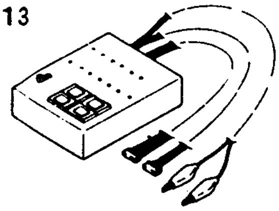
J-11



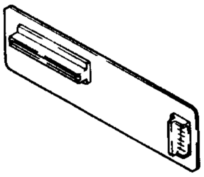
J-12



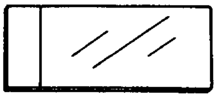
J-13



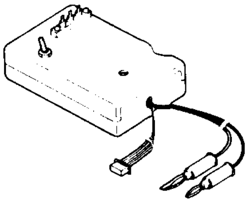
J-14



J-15



J-16



2-7. MECHANISM SECTION CHECKING, ADJUSTMENT, AND REPLACEMENT

Note : Use the mode selector (Ref. No.J-13) to check, adjust, and replace this mechanism section.

Note : The modes in ☐ are set up by pressing the mode selector buttons.

2-7-1. Reel Lock Lever Assembly (Refer to Fig. 2-12)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in Figs. 2-1. and 2-2.
2) Remove the tension coil spring ❶ from the notch ❷.
3) Remove the stop washer ❸ and remove the reel lock lever assembly ❹ from the spindle ❺.

2. Remounting

1) Remount the reel lock lever assembly ❹ on the spindle ❺, and fix in place with the stop washer ❸.
2) Hook the tension coil spring ❶ on the notch ❷.
3) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

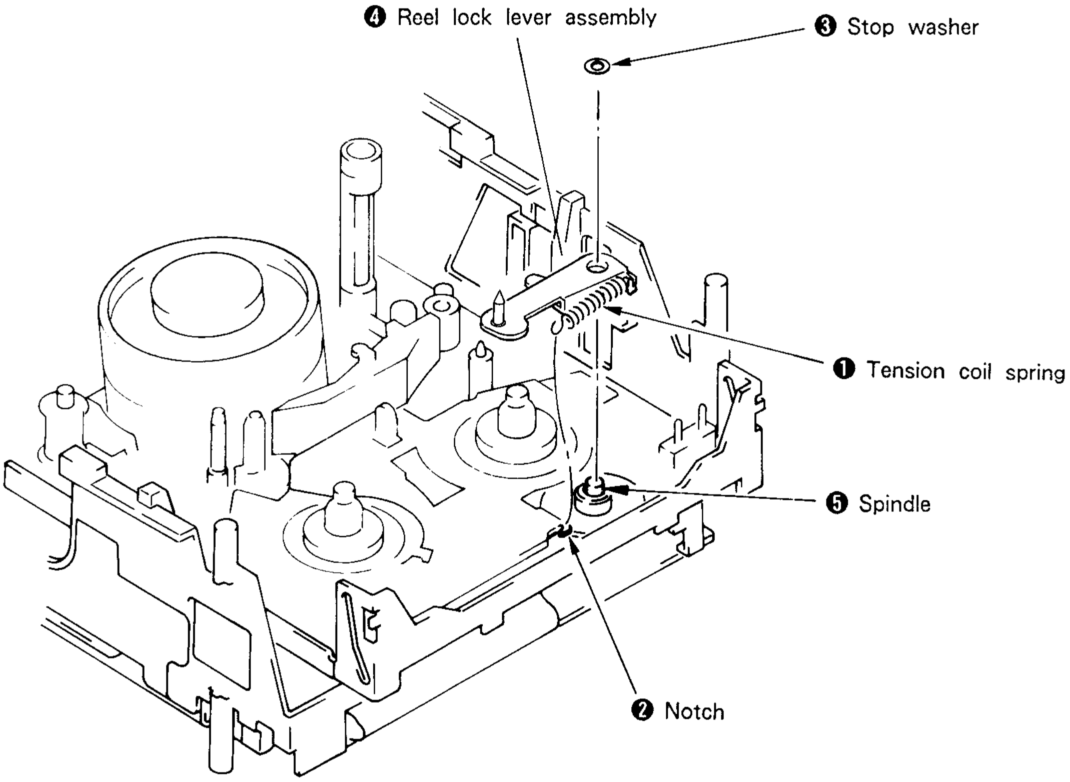


Fig. 2-12

2-7-2. Oscillating Stopper Plate (Refer to Fig. 2-13.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Lift up the LED assembly ❶ to remove while pressing the claw ❼ of the LED assembly ❶ in the direction of the arrow Ⓐ. And remove the claw ❷.
4) Remove the screws ❸ and ❹.
5) Remove the oscillating stopper plate ❻ from the two claws ❺.

Note : Use caution when removing and remounting as pressing the claw ❼ too hard will cause bending or breaking.

2. Remounting

1) Set to the READY mode.
2) Insert the two claws ❺ into the two rods ❾ so that the LED assembly ❶ is over top of the oscillating stopper plate ❻.
3) Tighten the screws ❸ and ❹, in this order.
4) Hook the claw ❷ of the LED assembly ❶ and insert by pushing in the direction of the arrow Ⓑ.
5) Set to the EJECT mode.
6) Remount the reel lock lever assembly as instructed in 2-7-1.
7) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

Note : When mounting the oscillating stopper plate ❻, make sure that the TG-1 band assembly ❽ is not jammed.
The band will be loose in all modes except READY.

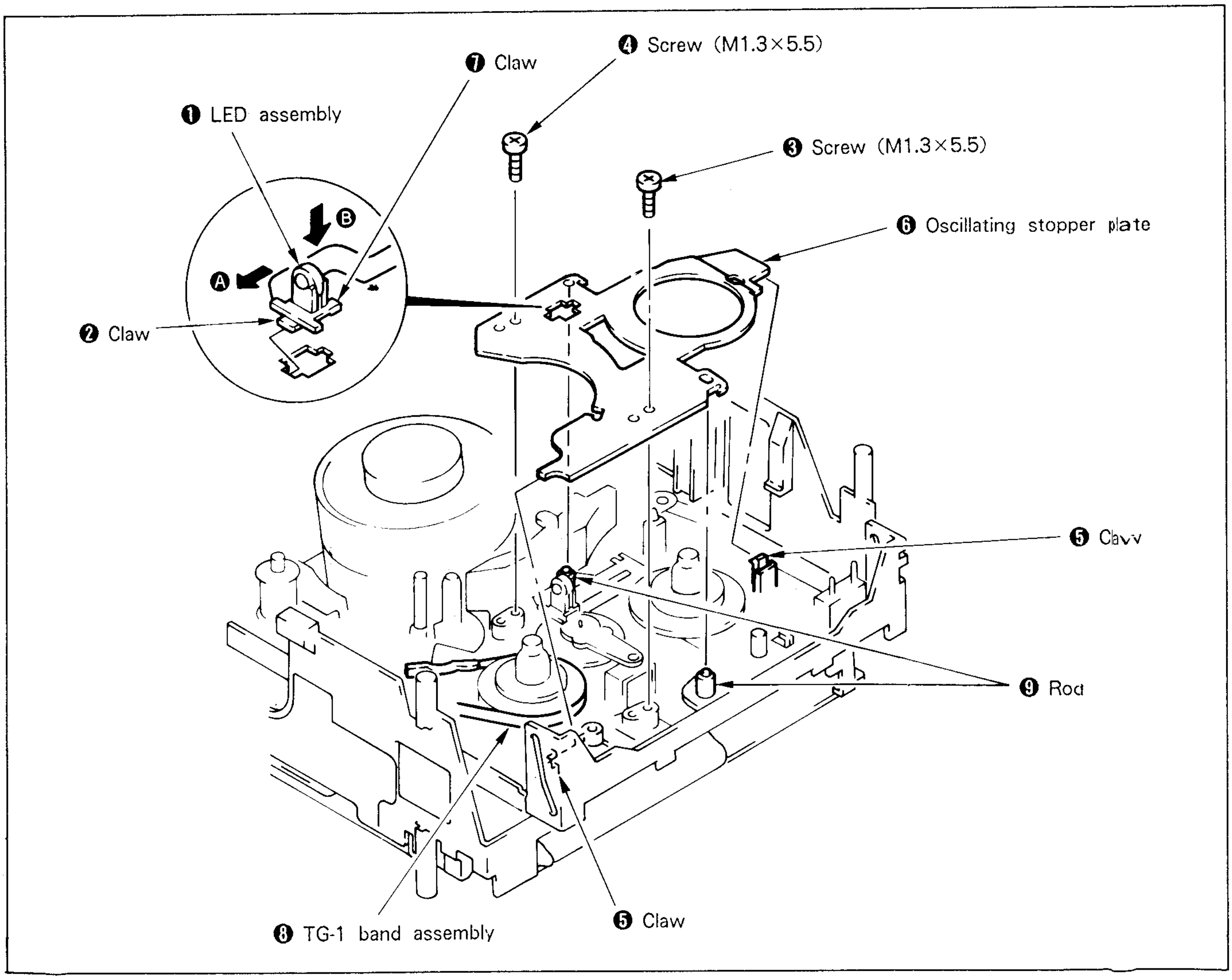


Fig. 2-13

2-7-3. S Reel Table Assembly (Refer to Fig. 2-14.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.
4) Remove the screw ❶ and remove one side of the TG-1 band assembly ❷.
5) Move the soft brake ❸ in the direction of the arrow 🅐.
6) Remove the S reel table assembly ❹.

Note : Hold the ※ reel claw part when removing the S reel table assembly ❹. (Hold the claw part in the same manner when mounting.)

2. Remounting

1) Place 1/3 to 1/2 a drop of oil on the part indicated by the arrow of the spindle ❺ as shown in Fig. A.
2) Move the soft brake ❸ in the direction of the arrow 🅐.
3) Mount the S reel table assembly ❹ on the spindle ❺.
4) Attach the TG-1 band assembly ❷ by the screw ❶.
5) Remount the oscillating stopper plate as instructed in 2-7-2.
6) Remount the reel lock lever assembly as instructed in 2-7-1.
7) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

Note : Check the reel table height as instructed in 2-7-26.
Perform tension regulator position adjustment as instructed in 2-7-28.
Perform FWD back tension adjustment as instructed in 2-7-29.

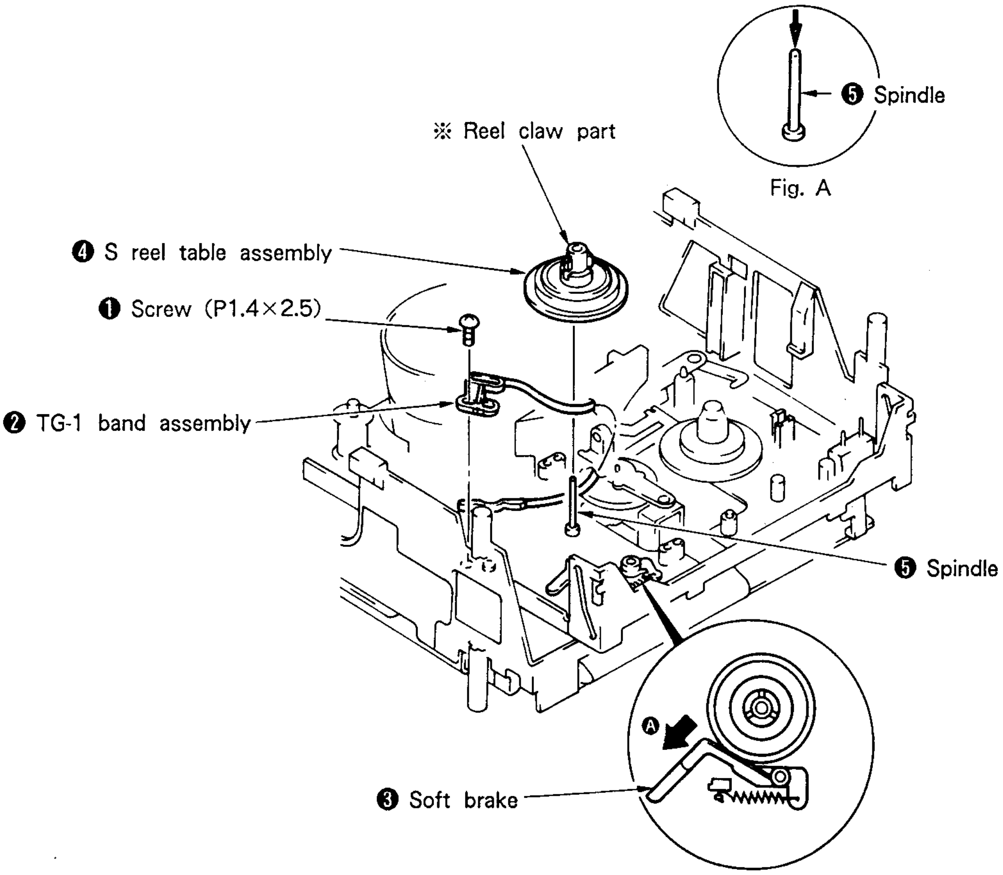


Fig. 2-14

2-7-4. T Reel Table Assembly (Refer to Fig. 2-15.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.
4) Remove the T reel table assembly ❶.

Note : Hold the ※ reel claw part when removing the T reel table assembly ❶. (Hold the claw part in the same manner when mounting.)

2. Remounting

1) Place 1/3 to 1/2 a drop of oil on the part indicated by the arrow of the spindle ❷ as shown in Fig. A.
2) Mount the T reel table assembly ❶ on the spindle ❷.
3) Remount the oscillating stopper plate as instructed in 2-7-2.
4) Remount the reel lock lever assembly as instructed in 2-7-1.
5) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

Note : Check the reel table height as instructed in 2-7-26.

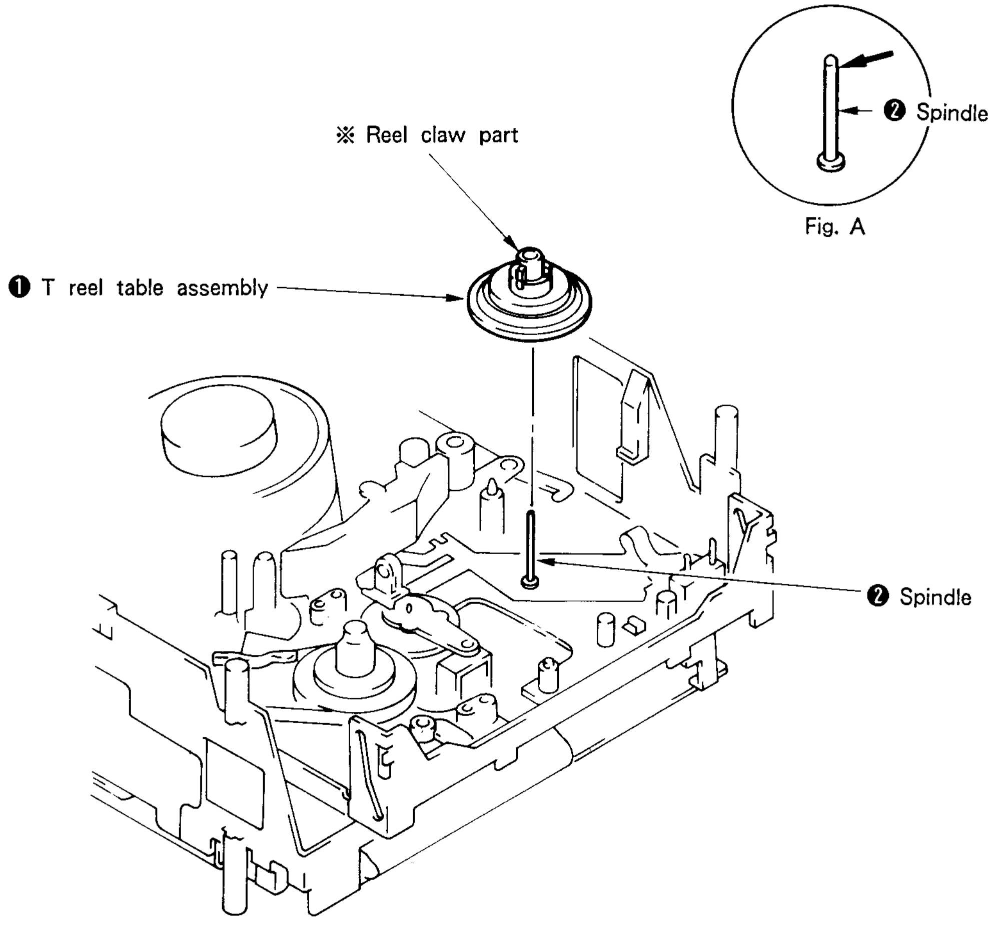


Fig. 2-15

2-7-5. Pinch Arm B Assembly (Refer to Fig. 2-16.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.
4) Remove the T reel table assembly as instructed in 2-7-4.
5) Remove the tension coil spring ❶ from the claw ❷.
6) Remove the stop washer ❸ and remove the pinch arm B assembly ❹.

2. Remounting

1) Apply molten grease to the arrow of the pinch arm B assembly ❹ as shown in Fig. A.
2) Place 1/3 to 1/2 a drop of oil on the part indicated by the arrow of the spindle ❺ as shown in Fig. B.
3) Mount the pinch arm B assembly ❹ on the spindle ❺ so that the pin lines up with the hole ❻ and pinch arm A ❼ as shown in Fig. C.
4) Attach the stop washer ❸.
5) Hook the tension coil spring ❶ on the claw ❷.
6) Remount the T reel table assembly as instructed in 2-7-4.
7) Remount the oscillating stopper plate as instructed in 2-7-2.
8) Remount the reel lock lever assembly as instructed in 2-7-1.
9) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

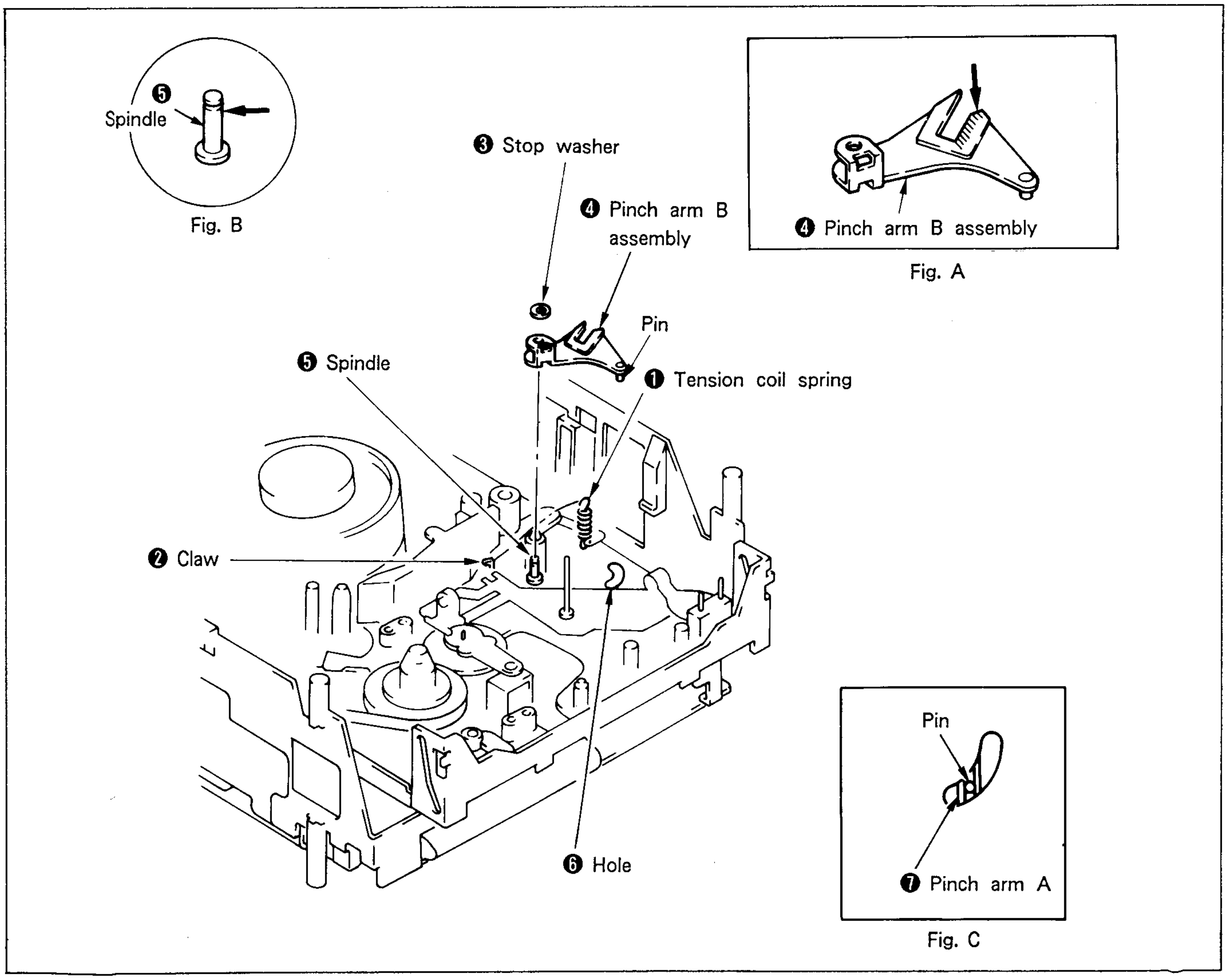

❺ Spindle
❸ Stop washer
❹ Pinch arm B assembly
Pin
❺ Spindle
❶ Tension coil spring
❷ Claw
❻ Hole
❹ Pinch arm B assembly
Pin
❼ Pinch arm A

Fig. B

Fig. A

Fig. C

Fig. 2-16

2-7-6. Pinch Arm C Assembly (Refer to Fig. 2-17.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.
4) Remove the tension coil spring ❶ from the claw ❷.
5) Remove the stop washer ❸, and remove the pinch arm C assembly ❹ and pinch lever assembly ❺.
6) Remove the tension coil spring ❻, and disassembly the pinch arm C assembly ❹ and pinch lever assembly ❺.

Note: Do not touch the roller section ※.

2. Remounting

1) Place 1/3 to 1/2 a drop of oil on the part indicated by the arrow of the spindle ❼ as shown in Fig. A.
2) Remount the pinch arm C assembly ❹ to the pinch lever assembly ❺ without touching the roller section, and hook the tension coil spring ❻.
3) Remount the pinch arm C assembly ❹ and pinch lever assembly ❺ on the shaft ❼.
4) Attach the stop washer ❸.
5) Hook the tension coil spring ❶ on the claw ❷.
6) Remount the oscillating stopper plate as instructed in 2-7-2.
7) Remount the reel lock lever assembly as instructed in 2-7-1.
8) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

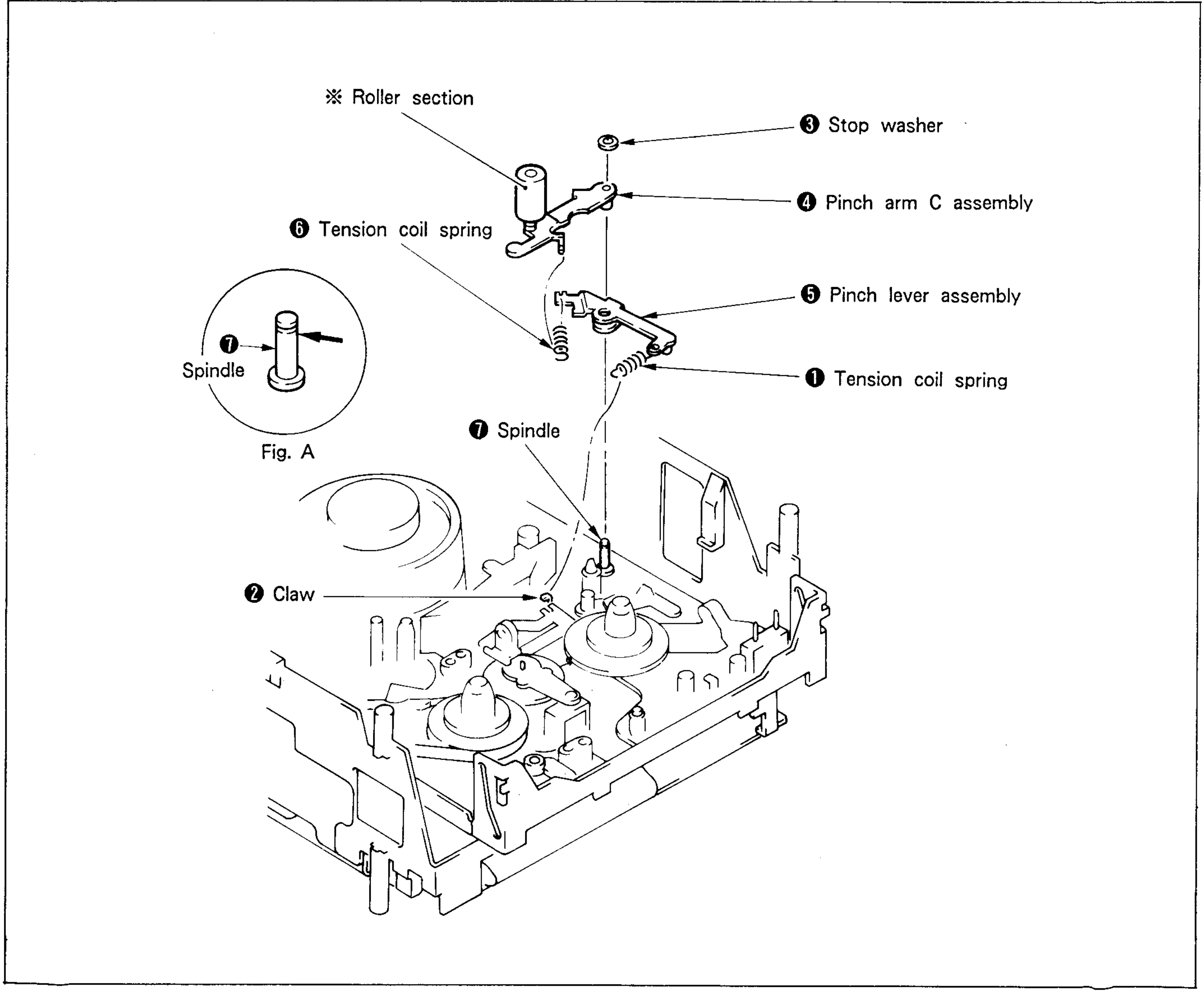

※ Roller section
❸ Stop washer
❹ Pinch arm C assembly
❻ Tension coil spring
❺ Pinch lever assembly
❼
Spindle
❶ Tension coil spring
Fig. A
❼ Spindle
❷ Claw

Fig. 2-17

2-7-7. TG-1 Arm Assembly (Refer to Fig. 2-18)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.
4) Remove the stop washer ❶ and remove the screw ❷.
5) Remove the tension coil spring ❸, and remove the TG-1 arm assembly ❹.

Note : Be sure not to touch the shoe section ※ (see Fig. 2-19) and the guide section ※.

2. Remounting

1) Place 1/3 to 1/2 a drop of oil on the part indicated by the arrow of the spindle ❺ as shown in Fig. A.
2) Remount the TG-1 arm assembly ❹ on the spindle ❺ without touching the guide.
3) Wind the TG-1 band assembly ❼ around the outside of the S reel table assembly ❻ and attach with the screw ❷ after lining up with the rod.
4) Attach the stop washer ❶.
5) Hook the tension coil spring ❸ in the position shown in Fig. B.
6) Remount the oscillating stopper plate as instructed in 2-7-2.
7) Remount the reel lock lever assembly as instructed in 2-7-1.
8) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

Note : Be sure that there is no bending of the band of the TG-1 band assembly ❼.
Perform tension regulator position adjustment as instructed in 2-7-28.
Perform FWD back tension adjustment as instructed in 2-7-29.

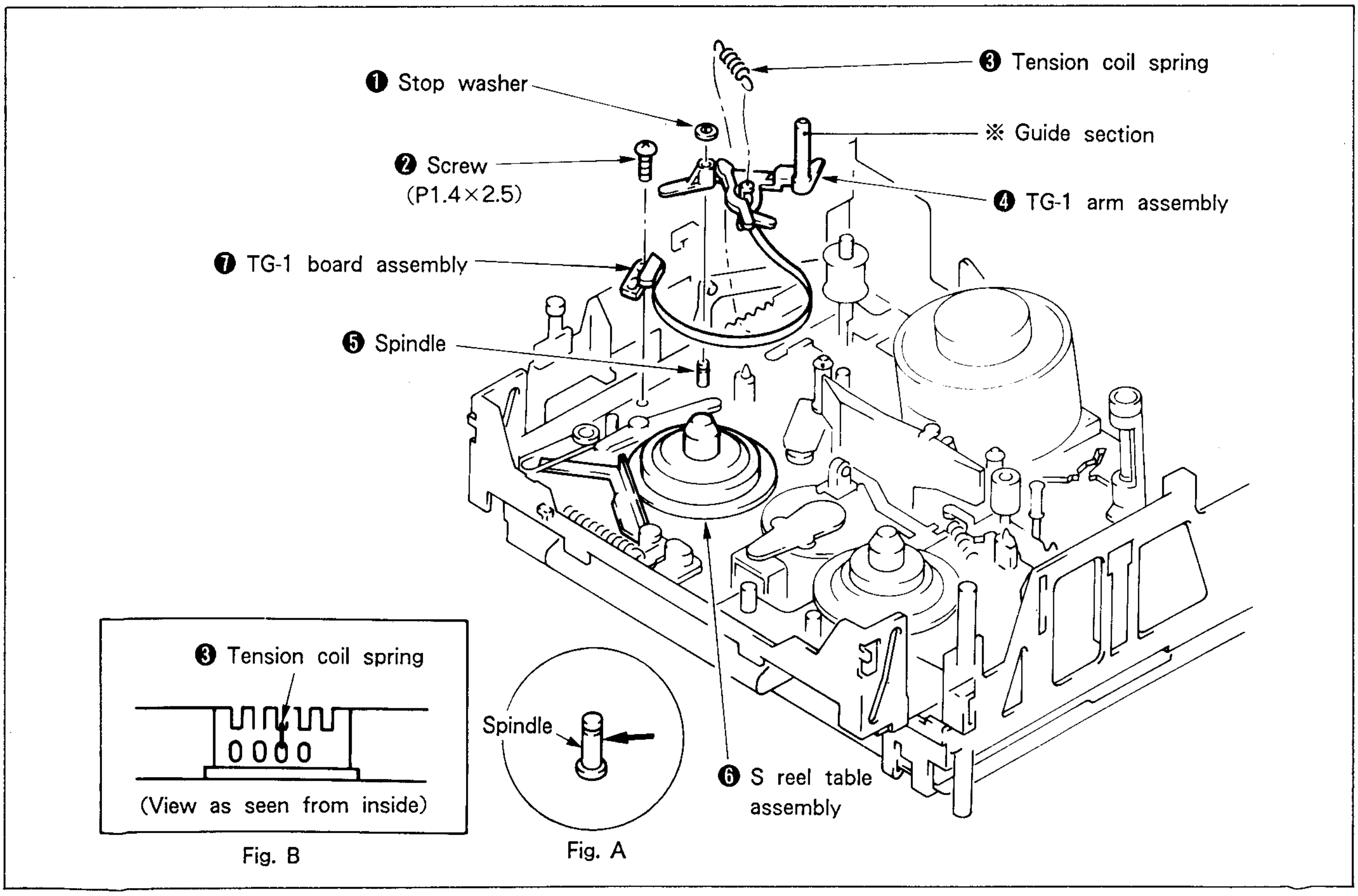

❶ Stop washer
❷ Screw
(P1.4×2.5)
❼ TG-1 board assembly
❺ Spindle
❸ Tension coil spring
※ Guide section
❹ TG-1 arm assembly
❻ S reel table assembly
❸ Tension coil spring
(View as seen from inside)
Spindle

Fig. B

Fig. A

Fig. 2-18

2-7-8. TG-1 Band Assembly (Refer to Fig. 2-19.)

1. Removal

1) Remove the TG-1 arm assembly ❸ as instructed in 2-7-7.
2) Remove the claw ❷ of the TG-1 band assembly ❶ from the hole of the TG-1 arm assembly ❸.

2. Remounting

1) Mount the claw ❷ of the TG-1 band assembly ❶ in the hole of the TG-1 arm assembly ❸.
2) Make sure that the TG-1 band assembly ❶ rotates smoothly centered around the hole of the TG-1 arm assembly ❸.
3) Remount the TG-1 arm assembly ❸ as instructed in 2-7-7.

Note : Be sure that there is no bending of the band of the TG-1 band assembly ❶.
Be sure not to touch the shoe section ※ and the guide section ※.

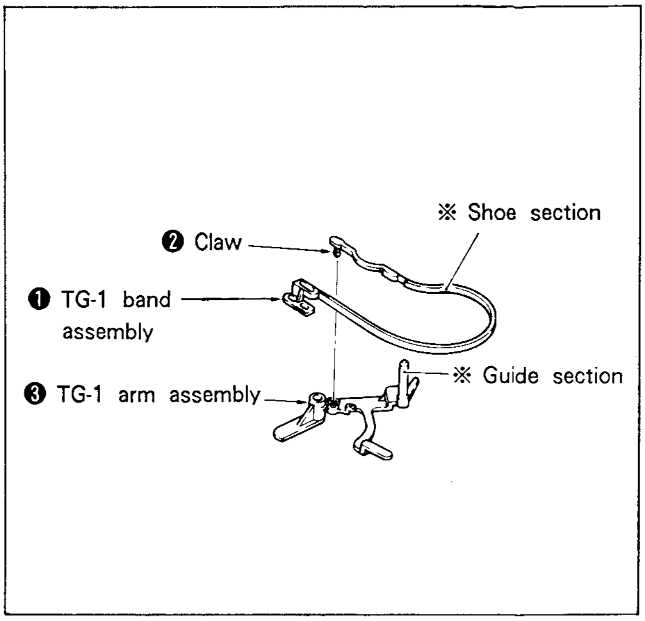


Fig. 2-19

2-7-9. Soft Brake Assembly (Refer to Fig. 2-20)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.
4) Remove the tension coil spring ❶ from the claw ❷.
5) Remove the soft brake assembly ❸.

2. Remounting

1) Attach the soft brake assembly ❸. Section Ⓐ is placed under the LS plate spring ❹ at this time.
2) Hook the tension coil spring ❶ on the claw ❷.
3) Remount the oscillating stopper plate as instructed in 2-7-2.
4) Remount the reel lock lever assembly as instructed in 2-7-1.
5) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1 and 2-2.

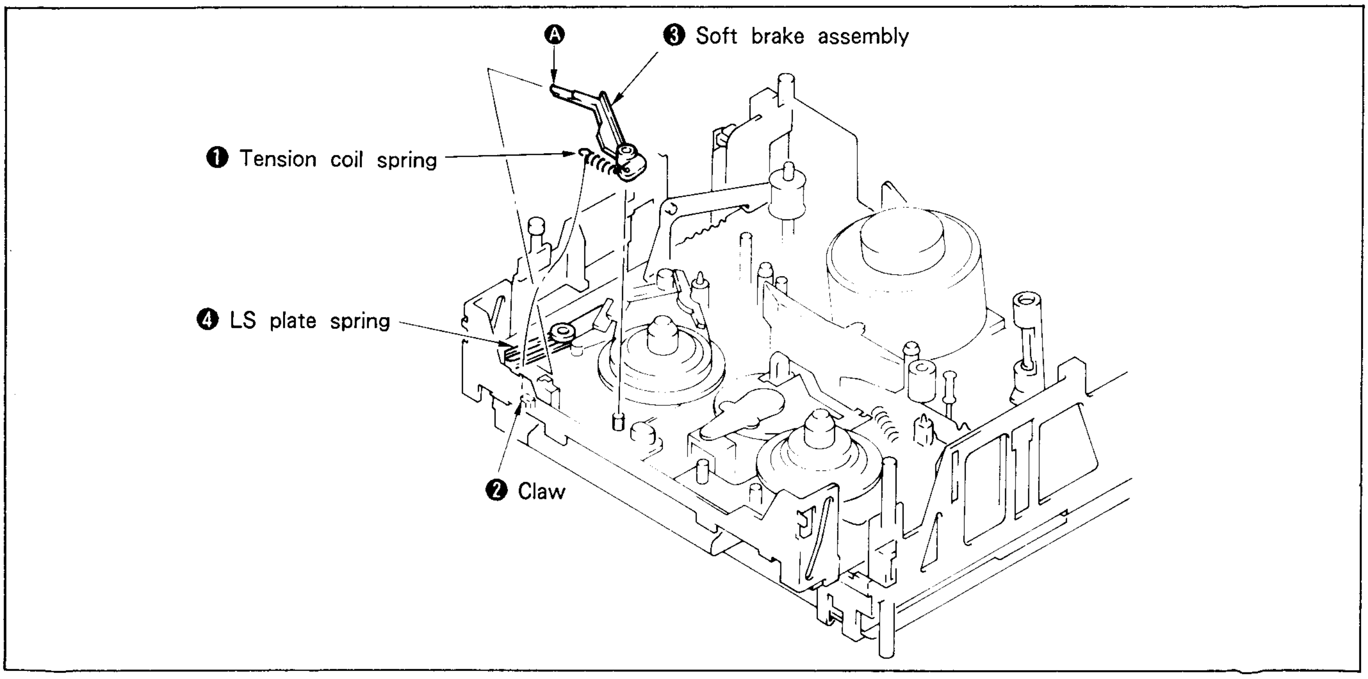


Fig. 2-20

2-7-10. LS Chassis Assembly (Refer to Fig. 2-21.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Set to BLANK AFTER GUIDE LOAD mode.
3) Remove the stop washer ❶.
4) Remove each three screws ❷ and LS guides ❸.
5) Remove the LS chassis assembly ❹ in the direction of the arrow Ⓐ.
6) Use a soldering iron to remove the soldering in nine places of the flexible board ❺ shown in Fig. A., and remove the flexible board ❺ attached to the mechanism chassis.

2. Remounting

1) Remove the tape attached to the rear side of the new flexible board ❺ and attach by lining up the spindle of the mechanism chassis and pattern of the board.
2) Solder the flexible board ❺ in nine places as shown in Fig. B.
3) Apply M grease to the sections of the LS chassis assembly ❹ indicated by arrows in Fig. C.
4) Move the reel lock lever assembly ❻ in direction of the arrow Ⓔ, and mount by lining up the four mounting holes of the LS chassis assembly ❹ with the spindle of the mechanism chassis.
5) Engage the two claws ❼ with the drum base.
6) Move the TG-7 arm assembly ❽ in the direction of the arrow Ⓕ (performed by pulling lightly with tweezers, etc.), and insert into the hole of the mechanism chassis.
7) As shown in Fig. D, insert the pin ❿ of the LS gear assembly into the long hole ❾ of the LS cam plate.
8) Insert the pin (see Fig. 2-16.) of the pinch arm B into the long hole of the pinch arm A.
9) Insert the TS arm ⓫ into the U groove of the pinch arm A ⓬.
10) Make sure that the reel lock lever assembly ❻ does not ride up on the reel lock lever B ⓭.
11) Make sure that the TG-1 release arm does not ride up on the M slider
12) Make sure that the pin of the oscillating gear arm assembly can be seen from the hole of the oscillating stopper plate

Note : Make sure that the assembly parts of the mechanism chassis have been properly assembled.

13) Make sure that there is complete mounting, and attach the LS guides ❸ and the screws ❷ in three places.
14) Attach the stop washer ❶.
15) Use the mode selector to make sure that loading and threading are smoothly carried out.
16) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

Note : Perform soldering as quickly as possible.

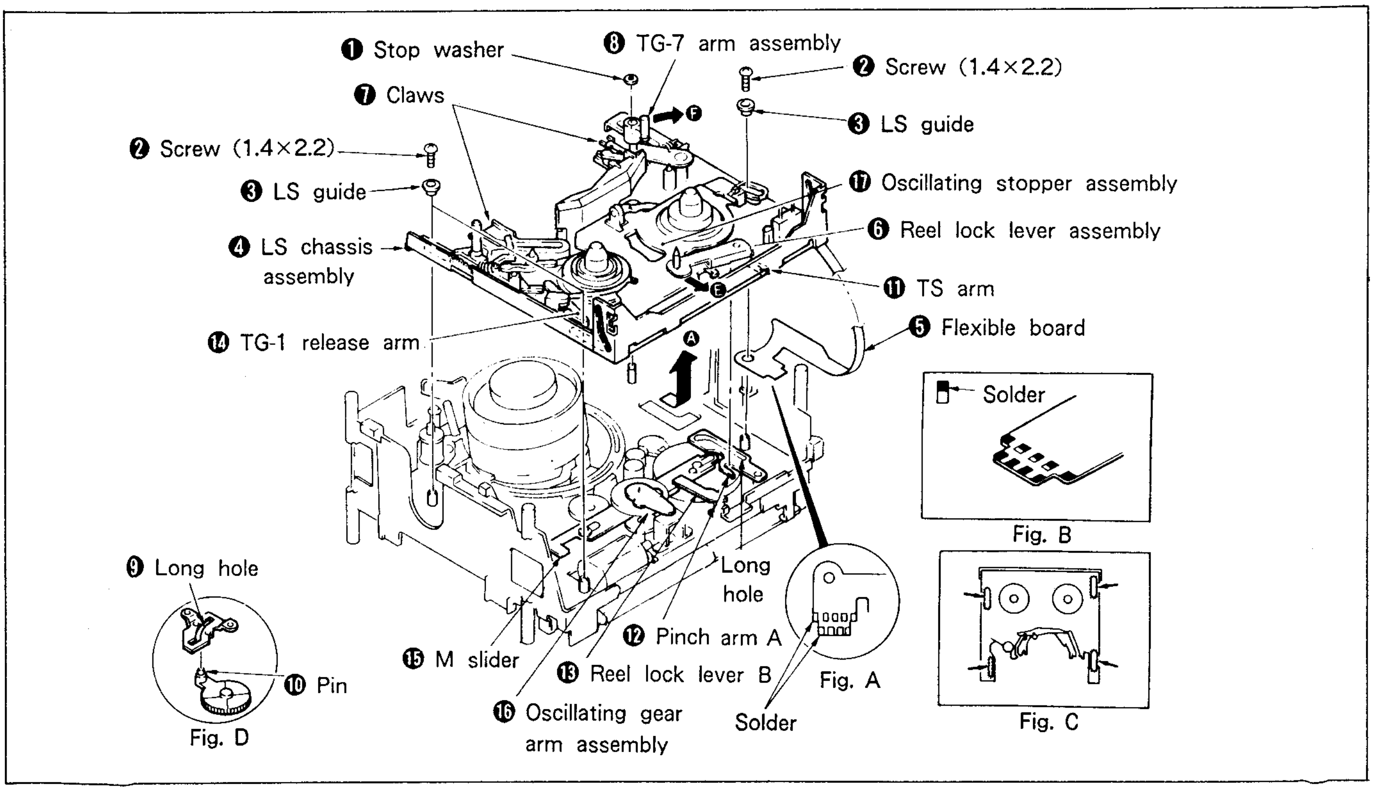

❶ Stop washer
❽ TG-7 arm assembly
❷ Screw (1.4×2.2)
❼ Claws
❸ LS guide
❷ Screw (1.4×2.2)
⓱ Oscillating stopper assembly
❸ LS guide
❻ Reel lock lever assembly
❹ LS chassis assembly
⓫ TS arm
⓮ TG-1 release arm
❺ Flexible board
Ⓕ
Ⓔ
Ⓐ
Solder
Fig. B
❾ Long hole
Long hole
⓬ Pinch arm A
⓯ M slider
⓭ Reel lock lever B
❿ Pin
⓰ Oscillating gear arm assembly
Solder
Fig. A
Fig. C
Fig. D

Fig. 2-21

2-7-11. TG-7 Arm Assembly (Refer to Fig. 2-22.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Turn over the LS chassis assembly.
4) Remove the stop washer ❶ (t=0.3mm).
5) Remove the TG-7 spring ❷ from the claw ❸, and remove the TG-7 arm assembly ❹.

Note: As the flexible board ※ is attached to the mechanism chassis, be careful not to break it when removing and mounting the mechanism chassis. Be sure not to deform the TG-7 arm.

2. Remounting

1) As shown in Fig. A, place 1/3 to 1/2 of a drop of oil on the part of the spindle indicated by the arrow.
2) Remount the TG-7 arm assembly ❹ through the TG-7 spring ❷.
3) Hook the TG-7 spring ❷ on the claw ❸.
4) Attach the stop washer ❶.
5) Remount the LS chassis assembly as instructed in 2-7-10.
6) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
7) Adjust the guide section height as instructed in 2-8. TAPE PATH ADJUSTMENT.

Note: Make sure that the stop washer ❶ is fully inserted into the groove of the spindle.

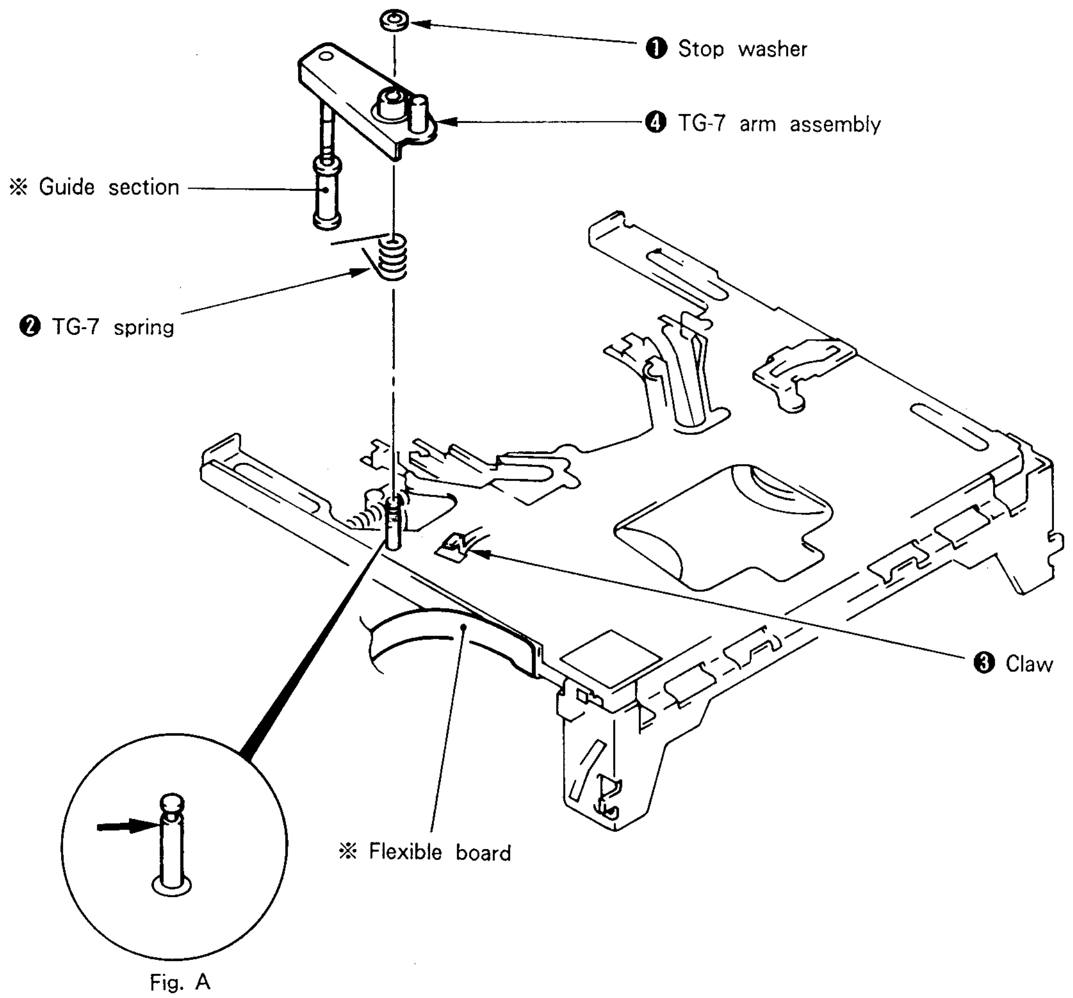


Fig. A

Fig. 2-22

2-7-12. Pinch Arm A Assembly (Refer to Fig. 2-23.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Remove the stop washer ❶.
4) Remove the pinch arm A assembly ❷.

2. Remounting

1) As shown in Fig. A, place 1/3 to 1/2 of a drop of oil on the part of the spindle indicated by the arrow.
2) As shown in Fig. B, apply molten grease to the section of the pinch arm A assembly ❷ indicated by the arrow.
3) Place the pin of the pinch arm A assembly ❷ in the outer groove of the cam assembly ❸ and attach to the spindle.
4) Attach the stop washer ❶.
5) Remount the LS chassis assembly as instructed in 2-7-10.
6) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

Note : Make sure that the stop washer ❶ is fully inserted into the spindle.

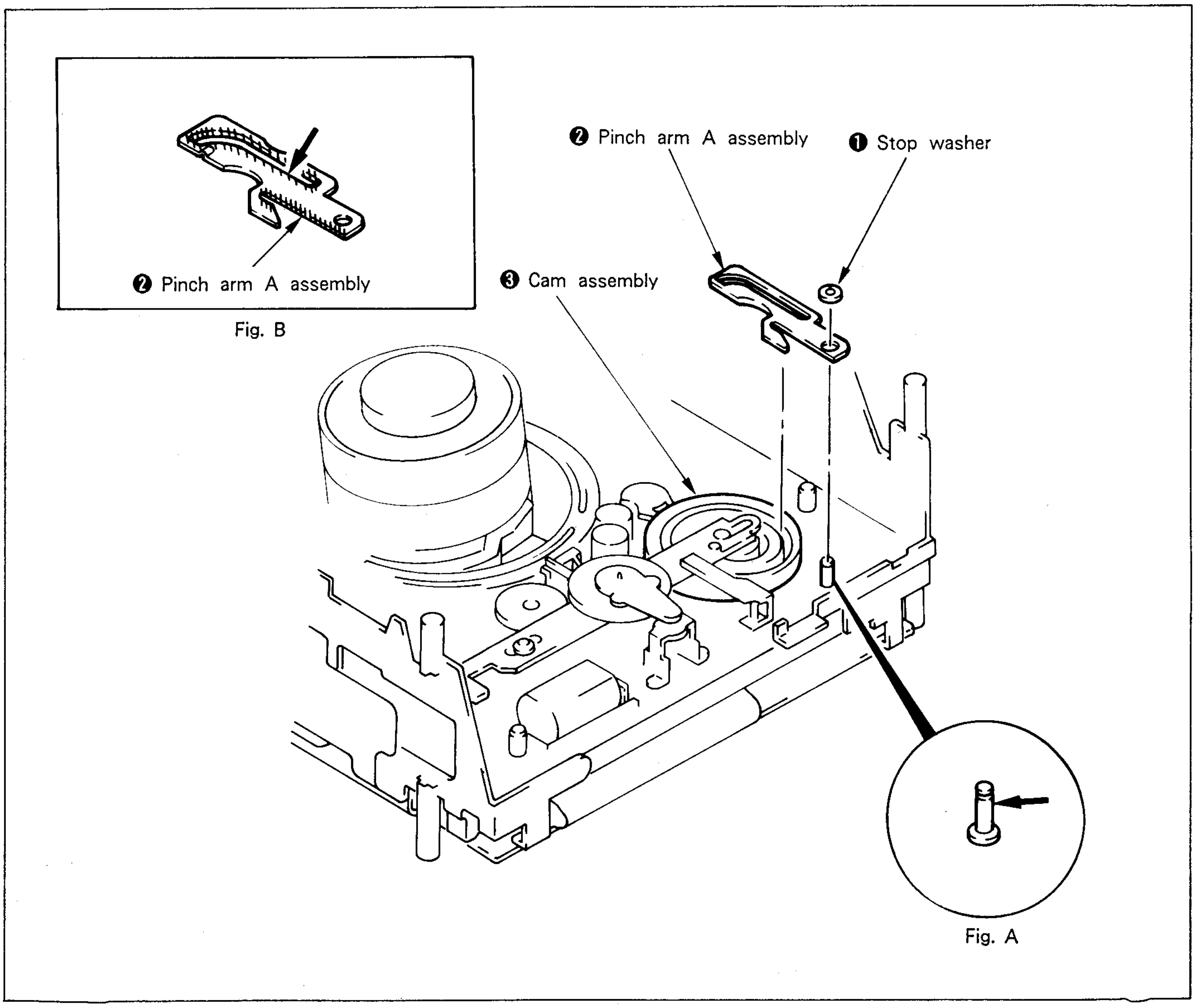


Fig. 2-23

2-7-13. M Slider Assembly (Refer to Fig. 2-24.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Remove the oscillating gear arm ❶.
4) Remove the E ring ❷ and remove the reel lock lever B ❸.
5) Remove the stop washer ❹.
6) Remove the stop washer ❺ and remove the M slider assembly ❻.

2. Remounting

1) As shown in Fig. A, apply molten grease to the section of the M slider assembly ❻ indicated by the arrow.
2) Insert the pin of the M slider assembly ❻ into the inner groove of the cam assembly ❼.
3) Attach the stop washer ❺ and the other stop washer ❹.
4) As shown in Fig. B, apply molten grease to the section of the reel lock lever B ❸ indicated by the arrow.
5) As shown in Fig. C and E, place 1/3 to 1/2 of a drop of oil on the part of the spindle indicated by the arrow.
6) As shown in Fig. D, remount the reel lock lever B ❸ so that it is between the curved protruding section and pin.
7) Attach the E ring ❷.
8) Place 1/3 to 1/2 of a drop of oil on the outer circumference of the spindle of the timing base assembly ❽.
9) Remount the oscillating gear arm ❶.
10) Remount the LS chassis assembly as instructed in 2-7-10.
11) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

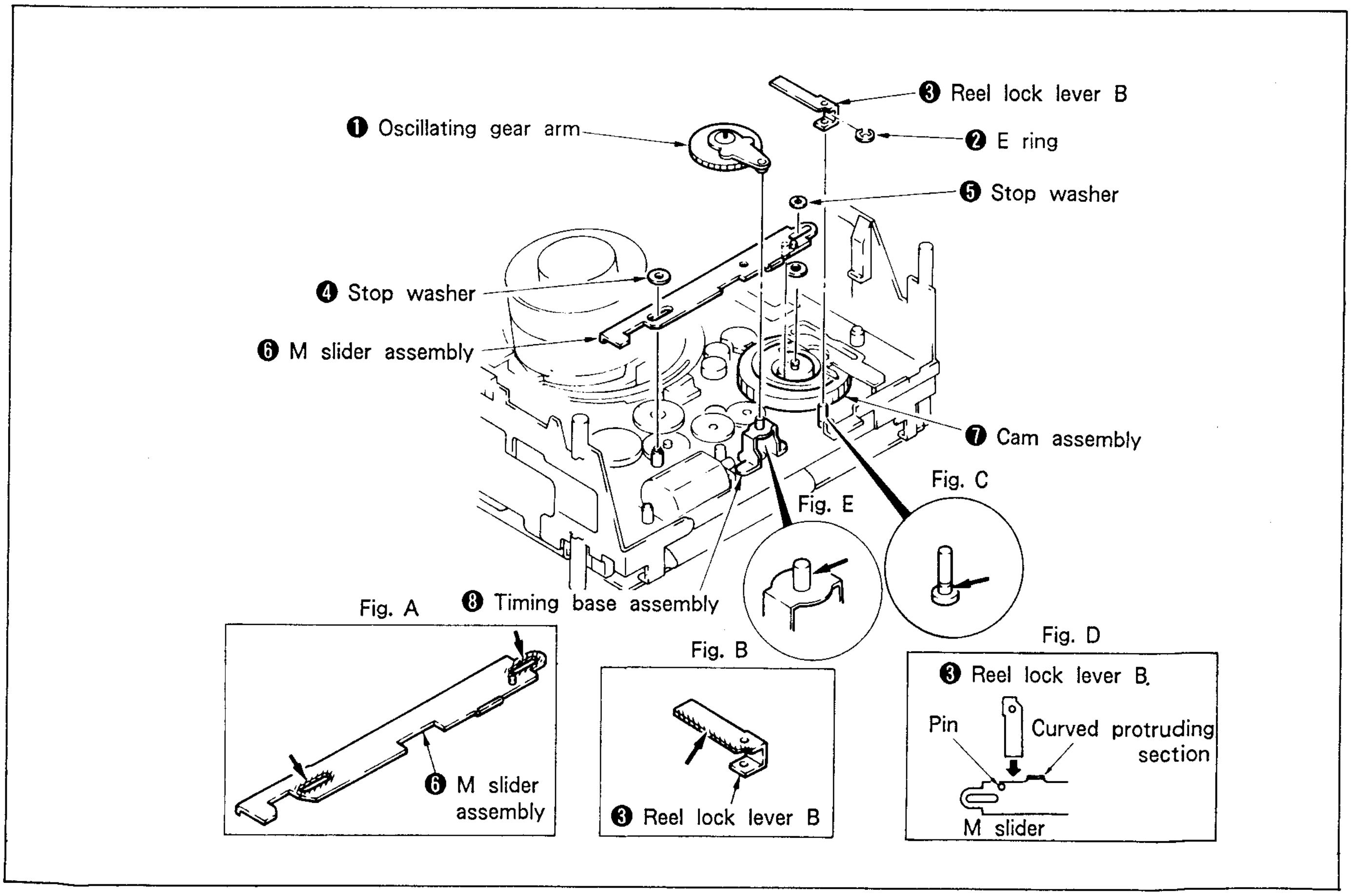

❸ Reel lock lever B
❶ Oscillating gear arm
❷ E ring
❺ Stop washer
❹ Stop washer
❻ M slider assembly
❼ Cam assembly
Fig. C
Fig. E
Fig. A
❽ Timing base assembly
Fig. B
Fig. D
❻ M slider assembly
❸ Reel lock lever B
❸ Reel lock lever B
Pin
Curved protruding section
M slider

Fig. 2-24

2-7-14. TG-4 Base Assembly, TG-5 Base Assembly

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Set to the GUIDE LOAD mode and remove the TG-4 base assembly ❶ and TG-5 base assembly ❷ from the drum base groove.
4) Centering around the pin ❹ of the TG-4 base assembly ❶, rotate around the top of the pin ❺ in the direction of the arrow Ⓐ, and remove from the notch ❸. (Refer to Fig. 2-25)
5) Remove the pin ❹ from the hole of the notch ❸.
6) Rotate the TG-5 base assembly ❷ in the direction of the arrow Ⓐ and remove from the notch ❼. (Refer to Fig. 2-26)
7) Remove the TG-5 base assembly ❷ from the pin ❻. (Refer to Figs. 2-26 and 2-27.)

Note : Be sure not to touch the guide section ※.

2. Remounting

1) Insert the pin ❻ into the hole of the TG-5 base assembly ❷.
2) Rotate the TG-5 base assembly ❷ in the direction of the arrow Ⓑ and insert below the notch ❼.
3) Place the pin ❹ of the TG-4 base assembly ❶ into the hole of the notch ❸.
4) Rotate the pin ❺ of the TG-4 base assembly ❶ in the direction of the arrow Ⓑ and insert into the notch ❸.
5) Make sure that the TG-4 base assembly ❶ and the TG-5 base assembly ❷ are in the positions shown in Figs. A and B respectively.
6) Insert the TG-4 base assembly ❶ and TG-5 base assembly ❷ into the groove of the drum base while slowly selecting the BLANK AFTER GUIDE LOAD mode.
   If the positions are not aligned, they will catch on the inlet to the drum base groove and will not move. Insert into the drum base groove while carefully lining up the position.
7) Remount the LS chassis assembly as instructed in 2-7-10.
8) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

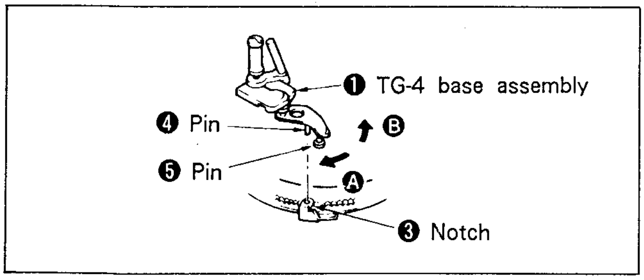


Fig. 2-25

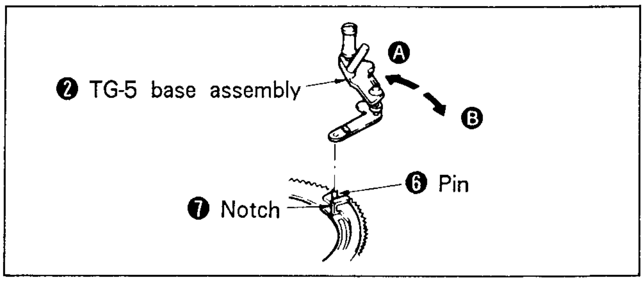


Fig. 2-26

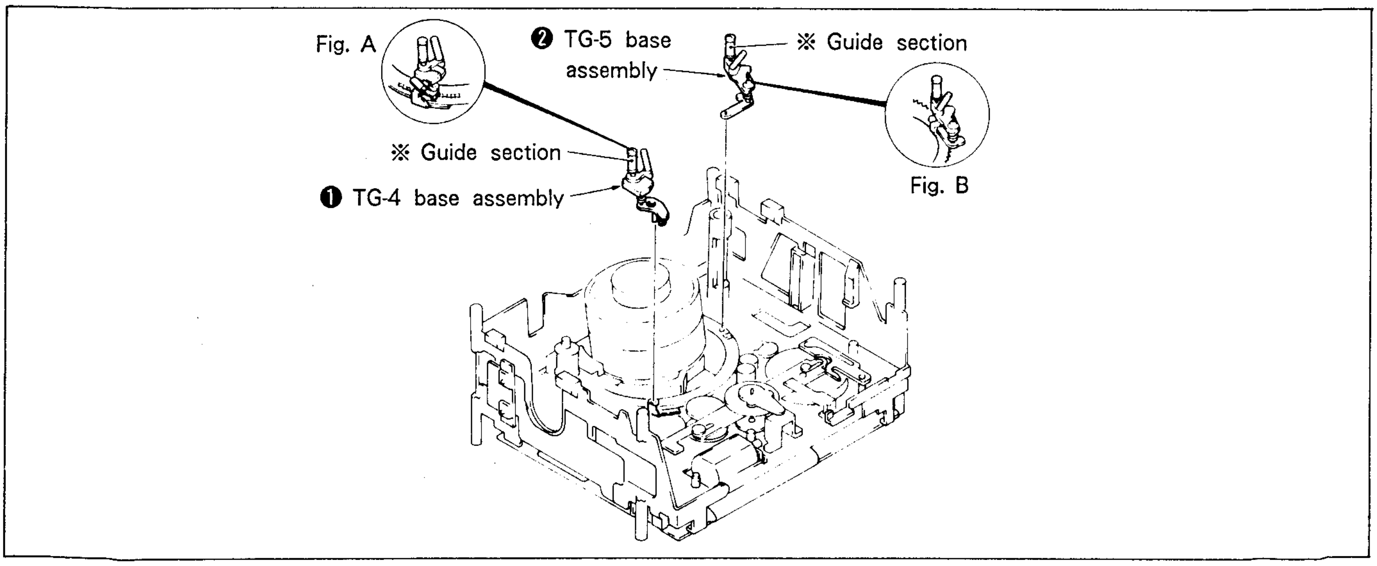


Fig. 2-27

2-7-15. Loading Slider T Assembly (Refer to Fig. 2-28.)

1. **Removal**

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Remove the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
4) Remove the drum unit as instructed in 2-7-24.
5) Remove the screw ❶, and remove the plate spring T ❷ and the T slider stopper ❸.
6) Remove the screw ❹ and remove the slider support ❺.
7) Remove the two stop washers ❻ and remove the loading slider T assembly ❼.

2. **Remounting**

1) As shown in Fig. A, apply molten grease to the section of the plate spring T ❷ indicated by the arrow.
2) As shown in Fig. B, apply molten grease to the section of the loading slider T assembly ❼ indicated by the arrow.
3) Line up the hole ❽ of the loading slider T assembly and hole ❾ of the loading slider S assembly, and remount the loading slider T assembly ❼.
4) Attach the two stop washers.
5) Line up the slider support ❺ with the rod and attach by the screw ❹.
6) Attach the T slider stopper ❸ and the plate spring T ❷ with the screw ❶.
7) Remount the drum unit as instructed in 2-7-24.
8) Remount the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
9) Remount the LS chassis assembly as instructed in 2-7-10.
10) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

Note : Make sure that the stop washer ❷ is fully inserted into the groove of the spindle.
After mounting the loading slider T assembly ❼, perform position adjustment as instructed in 2-7-17.

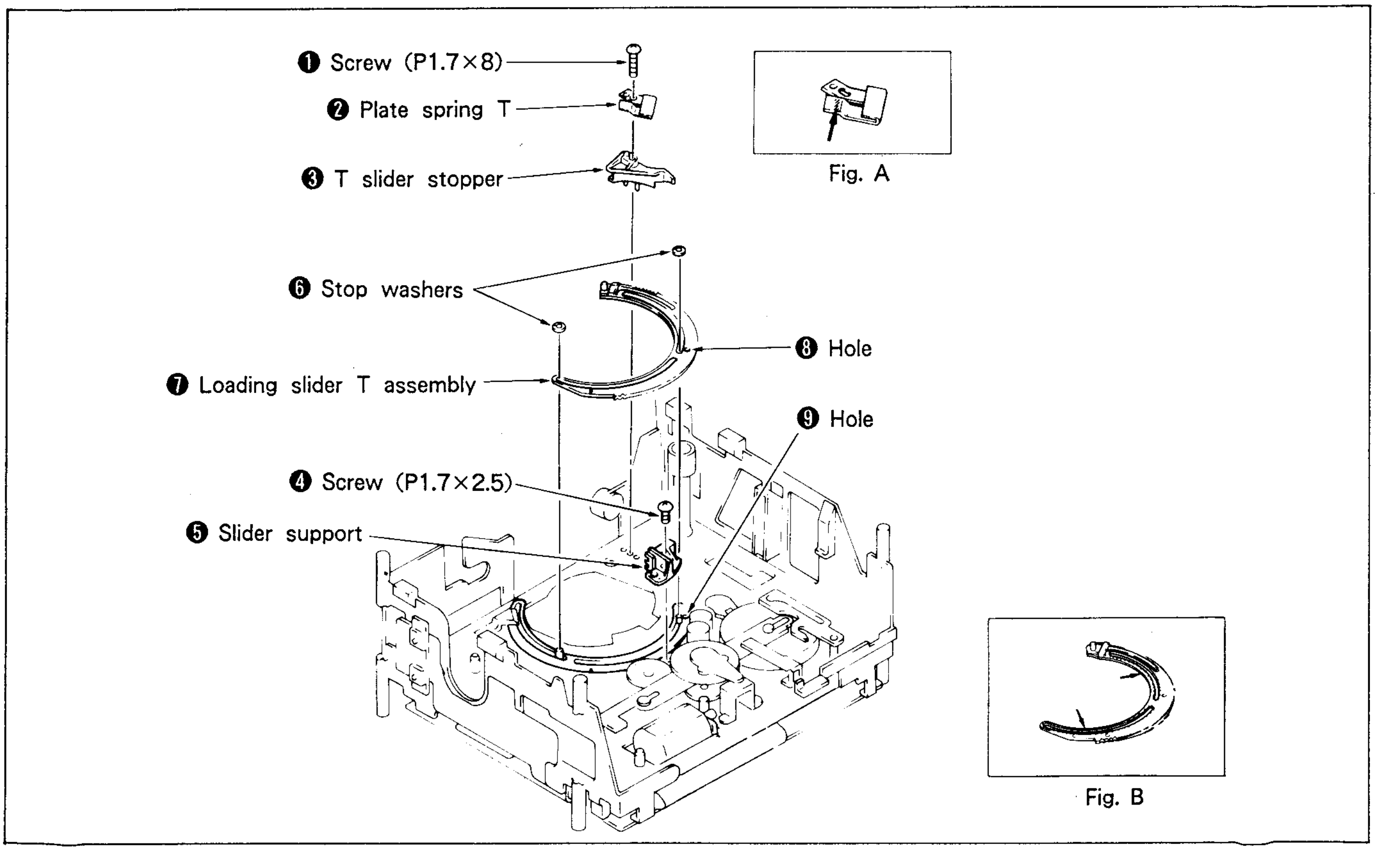


Fig. A

Fig. B

Fig. 2-28

2-7-16. Loading Slider S Assembly (Refer to Fig. 2-29.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Remove the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
4) Remove the drum unit as instructed in 2-7-24.
5) Remove the loading slider T assembly as instructed in 2-7-15.
6) Remove the screw ❶ and remove the S slider stopper ❷.
7) Remove the two guide rollers ❸ and remove the loading slider S assembly ❹.

2. Remounting

1) As shown in Fig. A, apply a small amount of M grease to the two sections of the spindle ❺ indicated by the arrow.
2) As shown in Fig. B, apply M grease to the section of the loading slider S assembly ❹ indicated by the arrow.
3) Line up the hole ❻ of the loading slider S assembly and hole ❼ of the mechanism chassis, and remount the loading slider S assembly ❹.
4) Attach the two guide rollers ❸.
5) Line up the S slider stopper ❷ up with the rod and attach by the screw ❶.
6) Remount the loading slider T assembly as instructed in 2-7-15.
7) Remount the drum unit as instructed in 2-7-24.
8) Remount the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
9) Remount the LS chassis assembly as instructed in 2-7-10.
10) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

Note : After mounting the loading slider T assembly, perform position adjustment as instructed in 2-7-17.

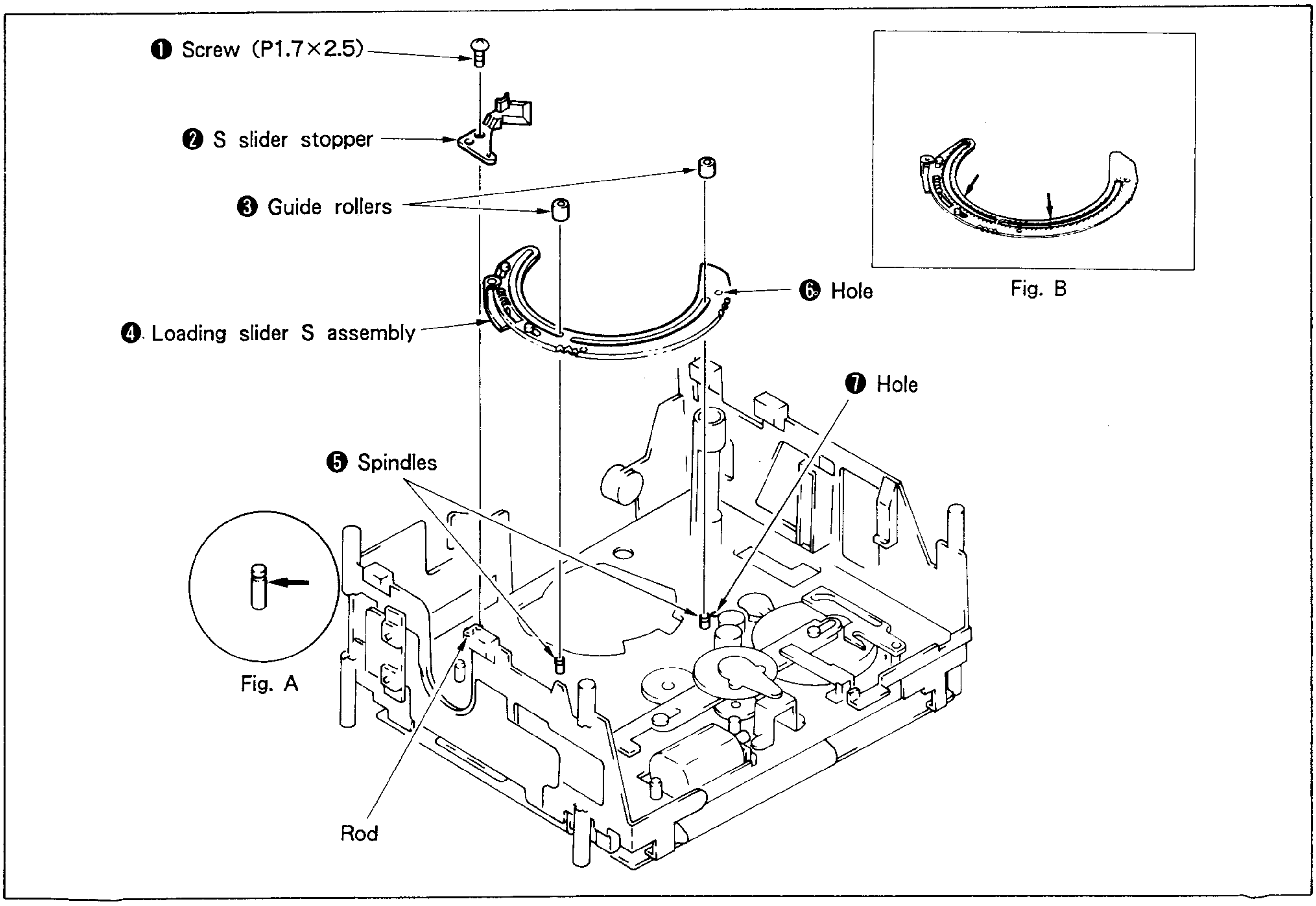


Fig. 2-29

2-7-17. Position Adjustment (Refer to Fig. 2-30.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Remove the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
4) Remove the drum unit as instructed in 2-7-24.
5) Remove the stop washer ❿ and remove the loading gear S ❻.
6) Remove the stop washer ❽ and remove the LS gear A ❼.

2. Adjustment

1) Confirm that the BLANK AFTER GUIDE LOAD mode is selected.
2) Line up the hole positions of the loading slider T assembly ❷, loading slider S assembly ❸, and the mechanism chassis, and insert a rod ❶ with a diameter of 1mm.
3) Line up the hole positions of the LS gear C assembly ❹ and mechanism chassis, and insert a rod ❶ with a diameter of 1mm.
4) Rotate the loading gear M ❺ so that the notch of the loading gear M ❺ comes to the loading gear S ❻ side, as shown in Fig. A.
5) Align the hole of the loading slider T assembly ❷ and LS gear A ❼ hole so that they are in a straight line, and attach the LS gear A ❼.
6) Attach the stop washer ❽.
7) Attach the loading gear S ❻ and attach the stop washer ❿.

Note : Make sure that the stop washers ❽ and ❿ are fully inserted into the groove of the spindle.

3. Remounting

1) As shown in Fig. C, apply grease (minute amount) in five places in the inner groove of the cam assembly ❾.
2) Remount the drum unit as instructed in 2-7-24.
3) Remount the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
4) Remount the LS chassis assembly as instructed in 2-7-10.
5) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

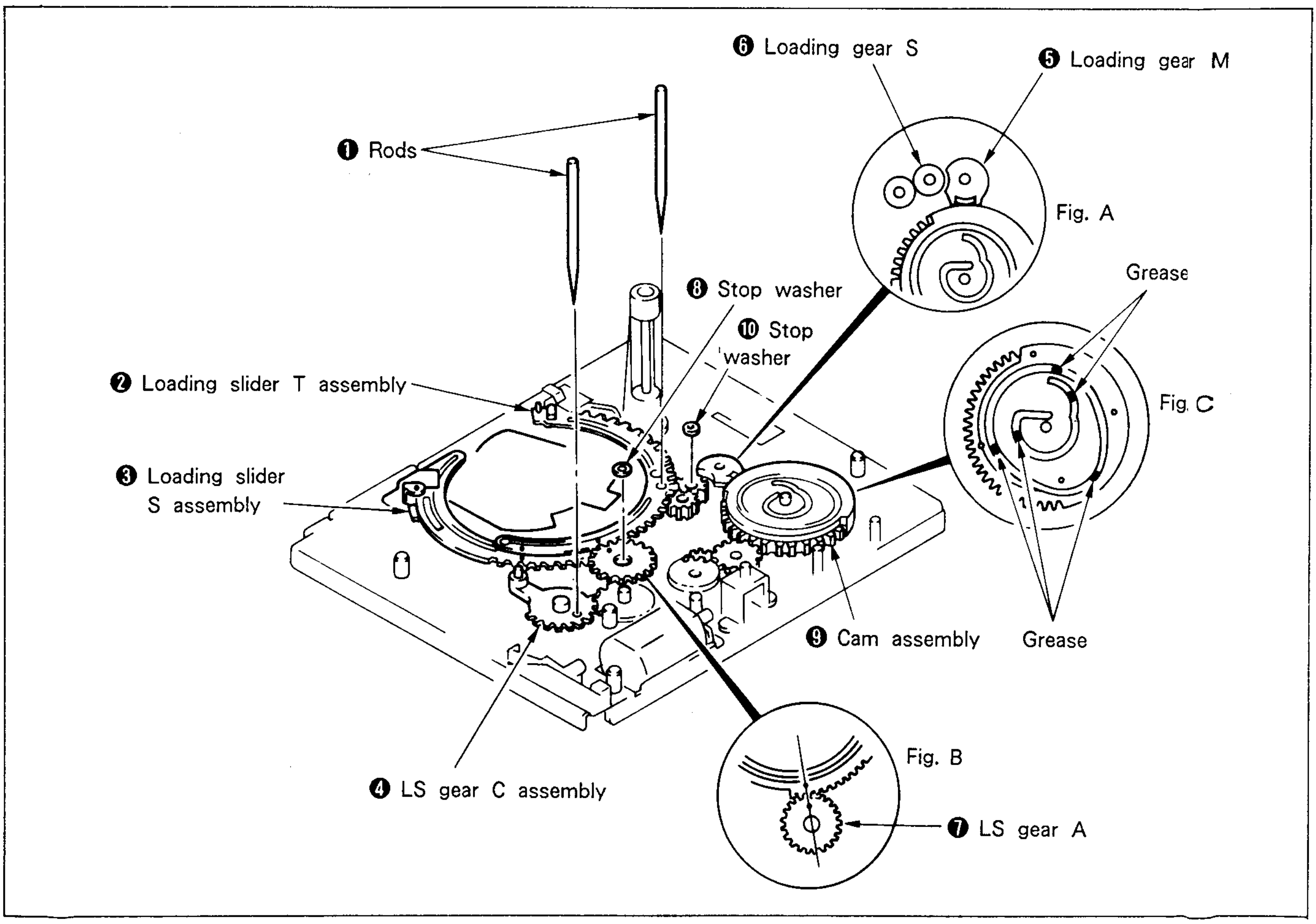

❻ Loading gear S
❺ Loading gear M
❶ Rods
Fig. A
Grease
❽ Stop washer
❿ Stop washer
❷ Loading slider T assembly
Fig. C
❸ Loading slider S assembly
❾ Cam assembly
Grease
Fig. B
❹ LS gear C assembly
❼ LS gear A

Fig. 2-30

2-7-18. Gear Train Operation Check (Refer to Fig. 2-31.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Remove the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
4) Remove the drum unit as instructed in 2-7-24.
5) Remove the LM motor assembly as instructed in 2-7-21.

2. Checking

1) Insert the tip of tweezers or a similar tool into the hole of the cam assembly ❶.
2) Rotate the cam assembly ❶ one revolution in the direction of the arrow Ⓐ, and then rotate one revolution in the direction of the arrow Ⓑ. Repeat three times.
3) At this time, confirm that the various gears and sliders in the diagram rotates smoothly and have no load on them.

Note : When rotating the cam assembly ❶ with the tip of tweezers etc., be sure not to damage the surface of the mechanism chassis.

3. Remounting

1) Remount the LM motor assembly as instructed in 2-7-21.
2) Remount the drum unit as instructed in 2-7-24.
3) Remount the TG-4 base assembly and TG-5 base assembly as instructed in 2-7-14.
4) Remount the LS chassis assembly as instructed in 2-7-10.
5) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

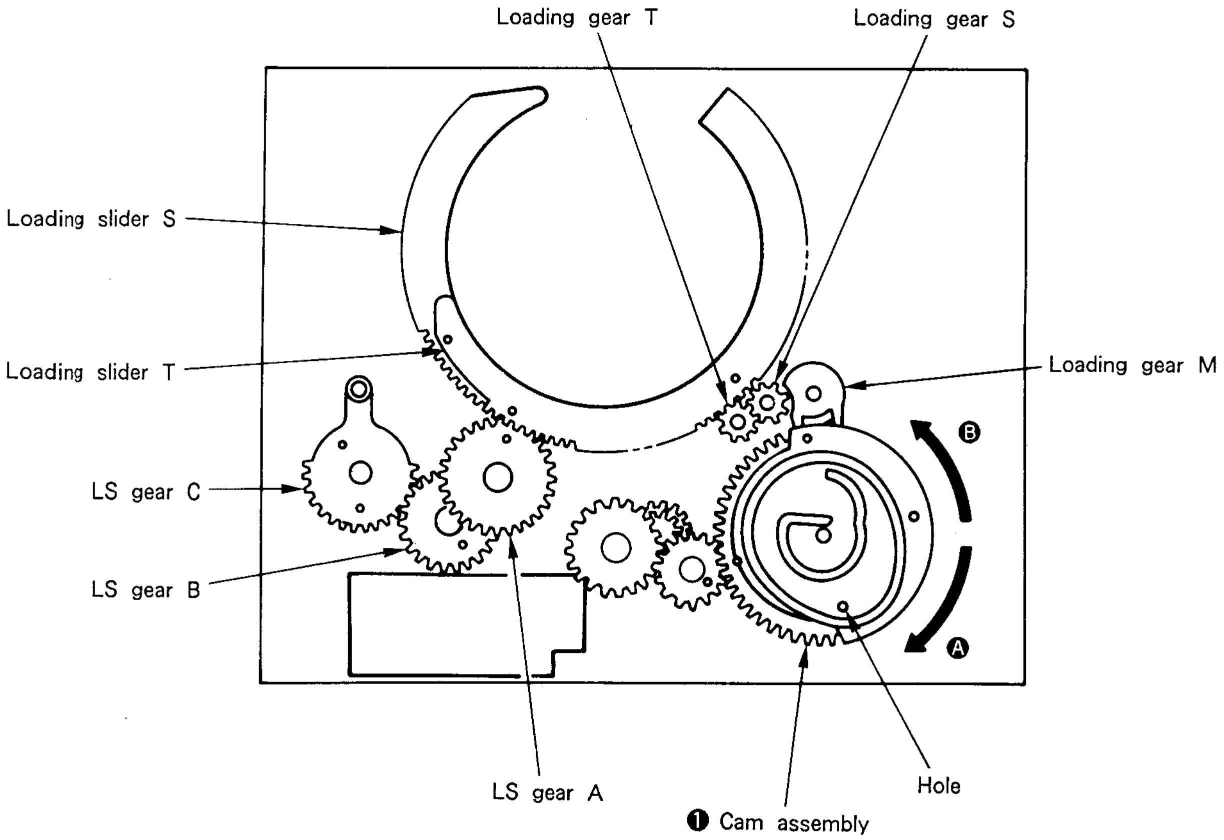


Fig. 2-31

2-7-19. Flexible Board (Refer to Fig. 2-32.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Remove the T reel table assembly as instructed in 2-7-4.
4) Remove the S reel table assembly as instructed in 2-7-3.
5) Remove the two claws ❶, lift up the push switch, detach the flexible board ❷ attached to the LS chassis, and remove from the LS chassis.

Note : When removing the flexible board ❷, be careful not to break it. Also, be sure not to deform the LS chassis.

2. Remounting

1) Use ethanol to clean the adhesive portion where the flexible board ❷ is attached to the LS chassis assembly.
2) Remove the tape attached to the rear of the new flexible board ❷ and attach by lining up the spindle ❸ of the LS chassis and the claw ❹.
3) Line up the two rods ❺, attach to the claw ❶, line up the rod ❻ with the hole of the flexible board ❷, and attach.
4) Remount the S reel table assembly as instructed in 2-7-3.
5) Remount the T reel table assembly as instructed in 2-7-4.
6) Remount the LS chassis assembly as instructed in 2-7-10.
7) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

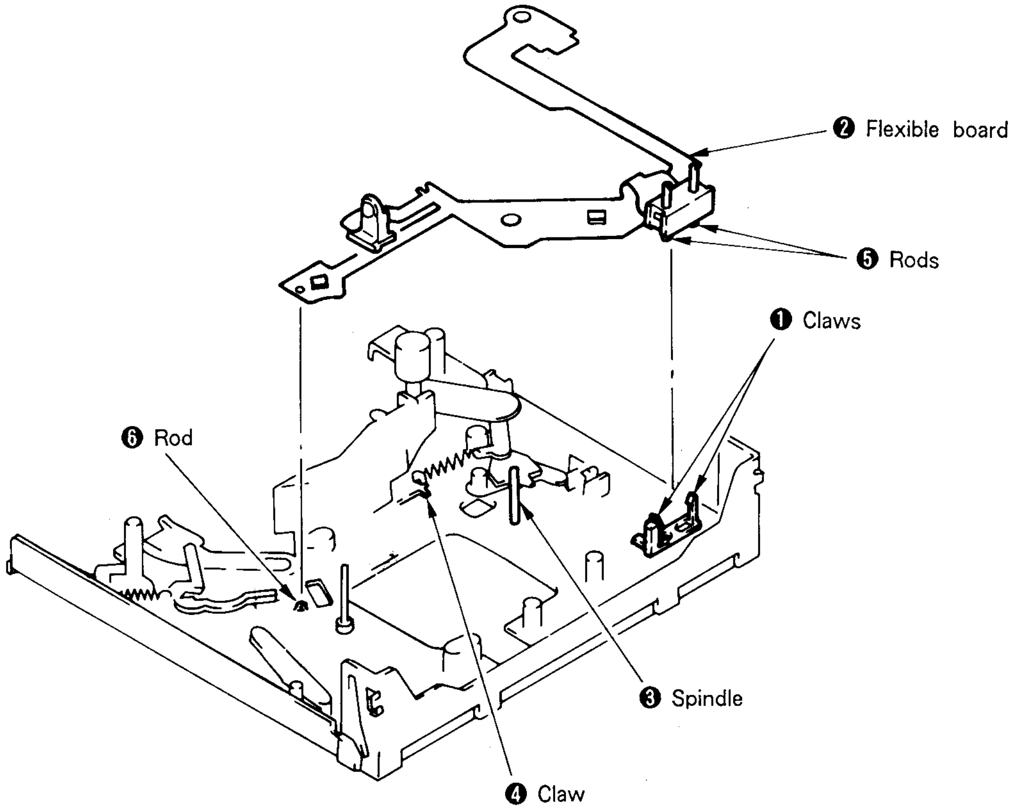


Fig. 2-32

2-7-20. Cassette Compartment Lock Assembly (Refer to Fig. 2-33.)

1. **Removal**

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the LS chassis assembly as instructed in 2-7-10.
3) Set to the READY mode.
4) Remove the two screws ❶ and ❷, and remove the cassette compartment lock assembly ❸.
5) Remove the screw ❹ and remove the CCD SW ❺.

2. **Remounting**

1) Remount the CCD SW ❺ using the screw ❹.
2) Line the cassette compartment lock assembly ❸ with the rod ❻, and attach.
3) Tighten the two screws ❶ and ❷.
4) Set to the BLANK AFTER GUIDE LOAD mode.
5) Remount the LS chassis assembly as instructed in 2-7-10.
6) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

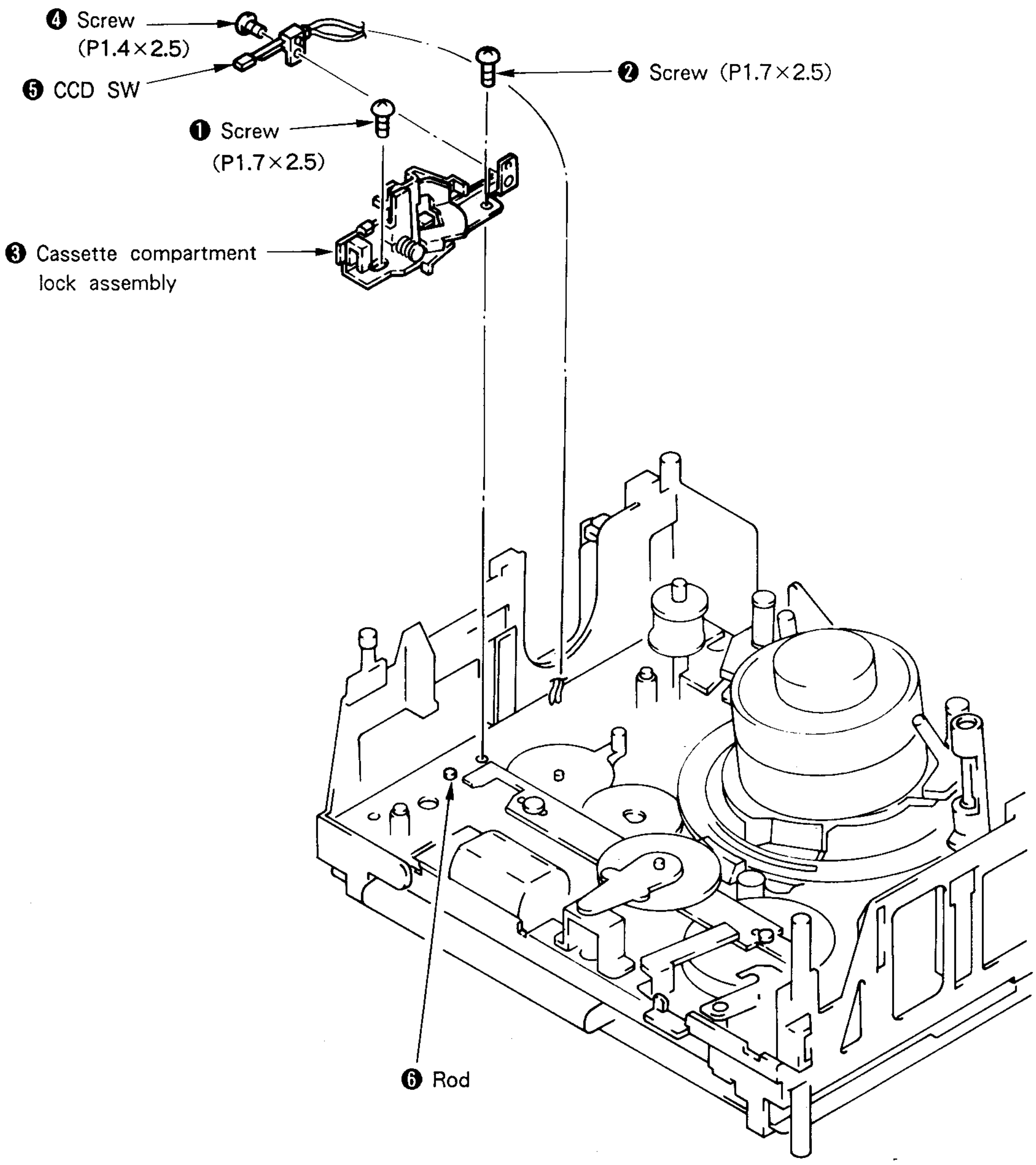

❹ Screw (P1.4×2.5)
❺ CCD SW
❶ Screw (P1.7×2.5)
❷ Screw (P1.7×2.5)
❸ Cassette compartment lock assembly
❻ Rod

Fig. 2-33

2-7-21. LM Motor Assembly (Refer to Fig. 2-34.)

1. Removal

1) Open the board on the rear of the mechanism chassis.
2) Remove the three screws ❶, ❷, and ❸, and remove the LM motor assembly ❹ in the direction of the arrow Ⓐ.
3) Remove the stop washer ⓭ from the spindle ❽, and remove the worm wheel ❿.
4) Remove the two screws ❺, and disassemble the motor holder assembly ❻ and DC motor ❼.
5) Unsolder the two cords ⓫ from the DC motor ❼, and remove the DC motor ❼ from the mechanism chassis.

2. Remounting

1) Remount the DC motor ❼ on the motor holder assembly ❻.
2) Place 1/3 of a drop of oil on the spindle ❽ and attach the worm wheel ❿.
3) Apply minute amount of grease to the worm ❾.
4) Solder the two cords from the DC motor ❼ to the two places shown in Fig. A.
5) Line up the pin ⓬ of the mechanism chassis with the hole of the motor holder assembly ❻ and attach.
6) Tighten the three screws ❸, ❷, and ❶ in this order.

Note : Solder the wires within 5 seconds at a temperature of 260° C.
Pull the cords from the DC motor ❼ so that they are not slack over the chassis.

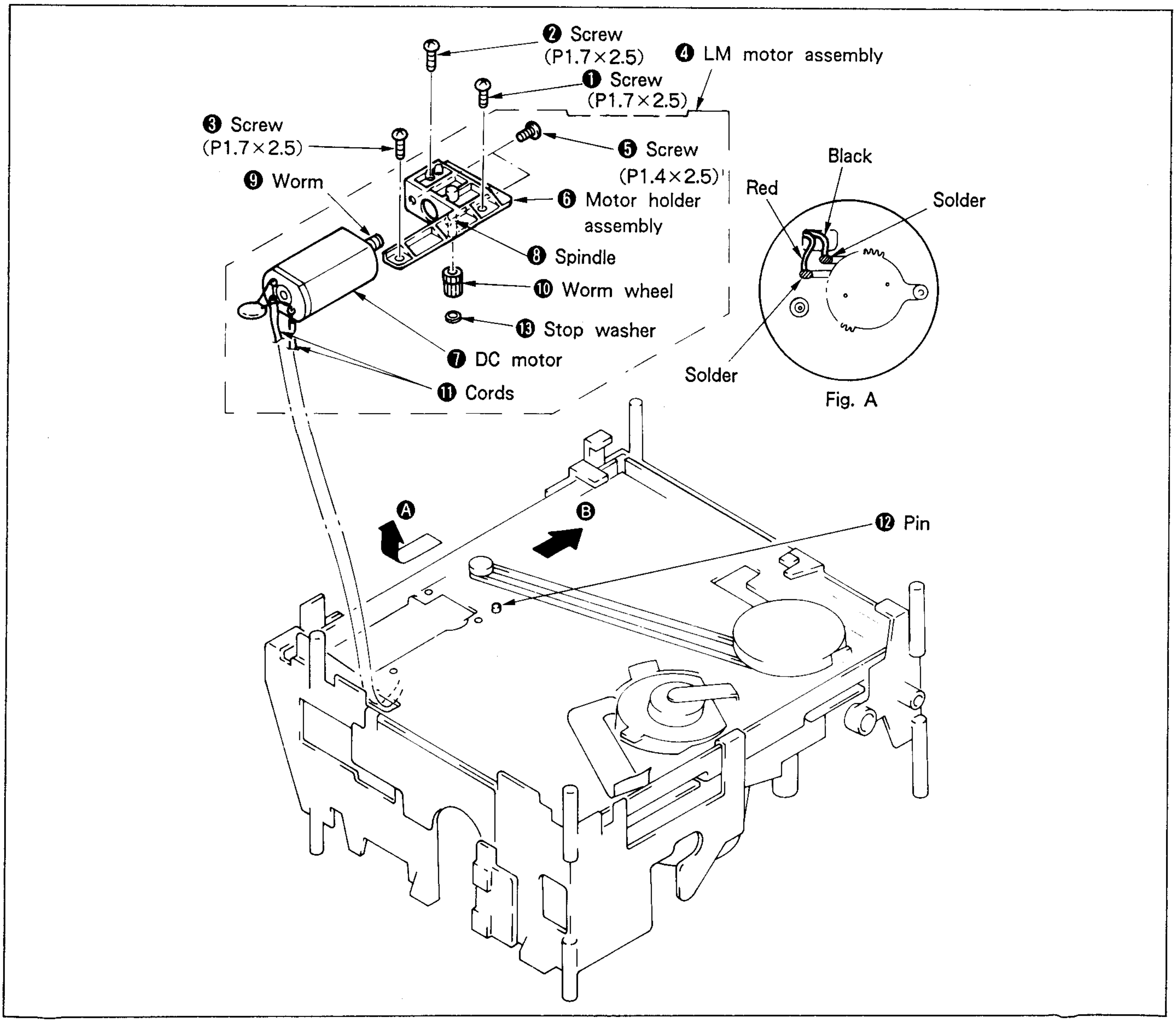

❷ Screw
(P1.7×2.5)
❹ LM motor assembly
❶ Screw
(P1.7×2.5)
❸ Screw
(P1.7×2.5)
❺ Screw
(P1.4×2.5)
❾ Worm
❻ Motor holder
assembly
❽ Spindle
❿ Worm wheel
⓭ Stop washer
❼ DC motor
⓫ Cords
Black
Red
Solder
Solder
Fig. A
Ⓐ
Ⓑ
⓬ Pin

Fig. 2-34

2-7-22. Capstan Motor Assembly (Refer to Fig. 2-35.)

1. Removal

1) Open the board on the rear of the mechanism chassis.
2) Remove the screws ❶ and ❷, and remove the capstan motor assembly ❺.
3) Remove the stop washer ❻ and conversion gear assembly ❼, and remove the timing belt ❸.

Note : Do not touch the capstan motor shaft ※, oil seal ※, and rotor section ※. Hold the housing section ※ when removing. (The same precautions apply to remounting.)

2. Remounting

1) As shown in Fig. A, place 1/3 to 1/2 of a drop of oil on the part of the spindle ❽ indicated by the arrow.
2) Mount the conversion gear assembly ❼ on the spindle ❽ while hooking the timing belt ❸.
3) Fix it in place with the stop washer ❻.
4) While hooking the timing belt ❸ on the pulley ❹, remount the capstan motor assembly ❺ on the mechanism chassis.
5) Confirm that the capstan motor and mechanism chassis surface are level as shown in Fig. B, and attach the screws ❶ and ❷ in this order.

Note : Make sure that the stop washer ❻ is fully inserted into the groove of the spindle.
Be sure to pull the timing belt ❸ to hard.

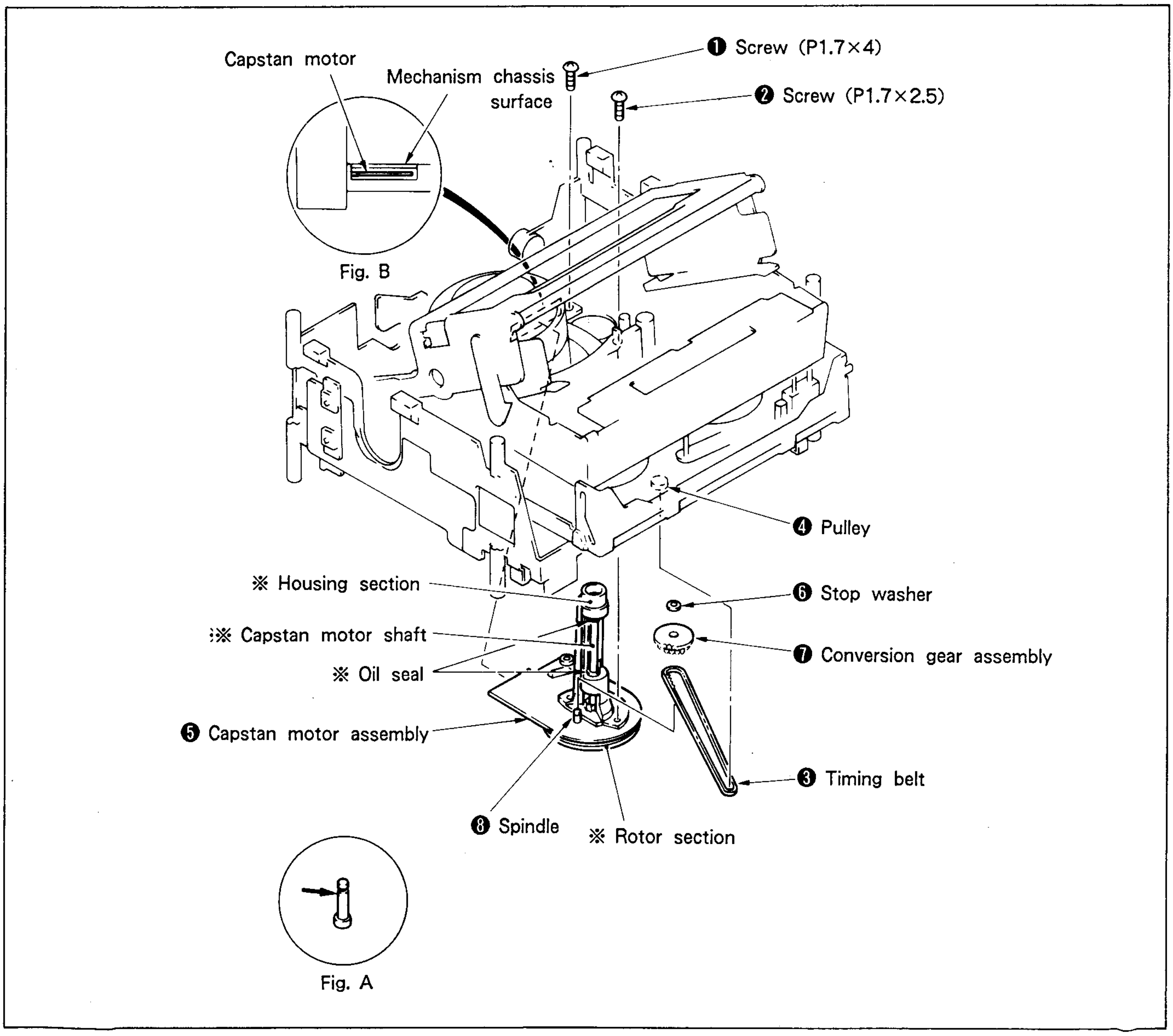

❶ Screw (P1.7×4)
Capstan motor
Mechanism chassis surface
❷ Screw (P1.7×2.5)
Fig. B
❹ Pulley
※ Housing section
❻ Stop washer
※ Capstan motor shaft
❼ Conversion gear assembly
※ Oil seal
❺ Capstan motor assembly
❸ Timing belt
❽ Spindle
※ Rotor section
Fig. A

Fig. 2-35

2-7-23. TG-2 (Refer to Fig. 2-36.)

1. Removal

1) Remove the TG-2 nut ❶.
2) Remove the upper flange holder ❷, TG-2 flange ❸, TG-2 roller ❹, TG-2 sleeve ❺, TG-2 lower flange ❻, lower flange holder ❼, and compression coil spring ❽.

Note : When removing the TG-2 nut ❶, be sure that the parts pushed by the compression coil spring ❽ do not fly up.
Use gloves when removing and remounting the TG-2 flange ❸ and TG-2 roller ❹.

2. Remounting

1) Remount the compression coil spring ❽, lower flange holder ❼, TG-2 lower flange ❻, TG-2 sleeve ❺, TG-2 roller ❹, TG-2 flange ❸, and upper flange holder ❷.
2) Attach the TG-2 nut ❶.
3) Perform TG-2 height presetting.

3. TG-2 height presetting

1) Push the upper flange holder ❷ down in the direction of the arrow as shown in Fig. A.
2) Tighten the TG-2 nut ❶ until the slit section is at the same height as the upper surface of the TG-2 shaft ❾.
3) As shown in Fig. B, rotate the TG-2 nut ❶ 180° in the direction of the arrow (tighten).

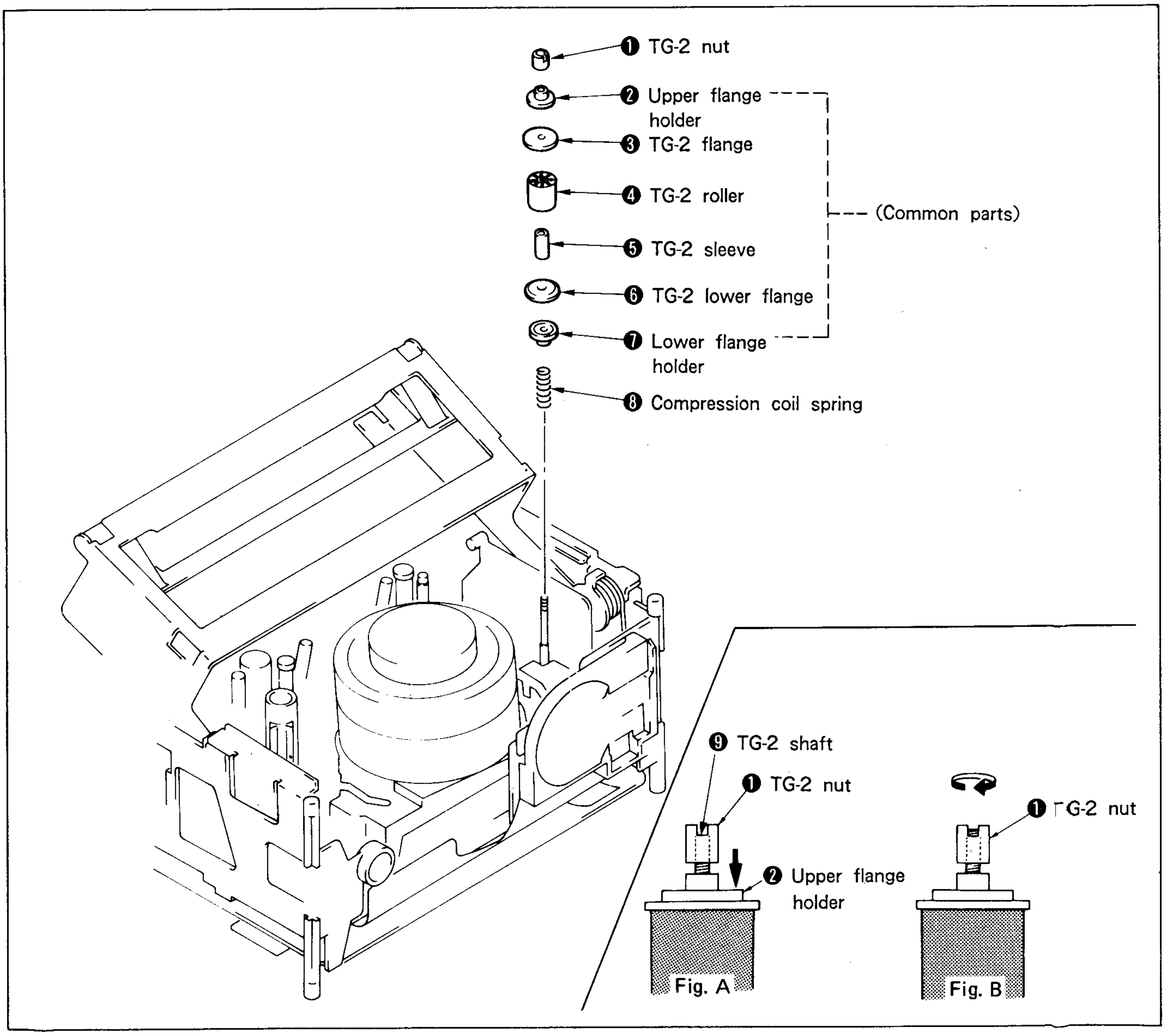

❶ TG-2 nut
❷ Upper flange holder
❸ TG-2 flange
❹ TG-2 roller
❺ TG-2 sleeve
❻ TG-2 lower flange
❼ Lower flange holder
❽ Compression coil spring
(Common parts)
❾ TG-2 shaft
❶ TG-2 nut
❷ Upper flange holder
Fig. A
❶ TG-2 nut
Fig. B

Fig. 2-36

2-7-24. Drum Unit (Refer to Fig. 2-37.)

1. Removal

1) Set to the $\boxed{\text{EJECT}}$ mode.
2) Open the boards around the mechanism chassis and remove the flexible board ❶.
3) Remove the two screws ❷ and the one screw ❸, and remove the drum base ❹ and the dew sensor ❺.
4) Remove the three screws ❻, and remove the drum unit ❼.

2. Remounting

1) Remount the drum unit ❼ on the drum base ❹, and fix in place with the three screws ❻.
2) Place the drum base ❹ on the mechanism chassis and attach with the two screws ❷.
3) Attach the dew sensor ❺ with the screw ❸ and the drum base ❹ with the two screws ❷.

Note : Do not reuse screws ❷ and ❸ after they have been unscrewed once.

4) Apply molten grease to the section indicated by the arrow in Fig. A.
5) Attach the flexible board ❶ to the board.
6) Perform 2-8. TAPE PATH ADJUSTMENT.

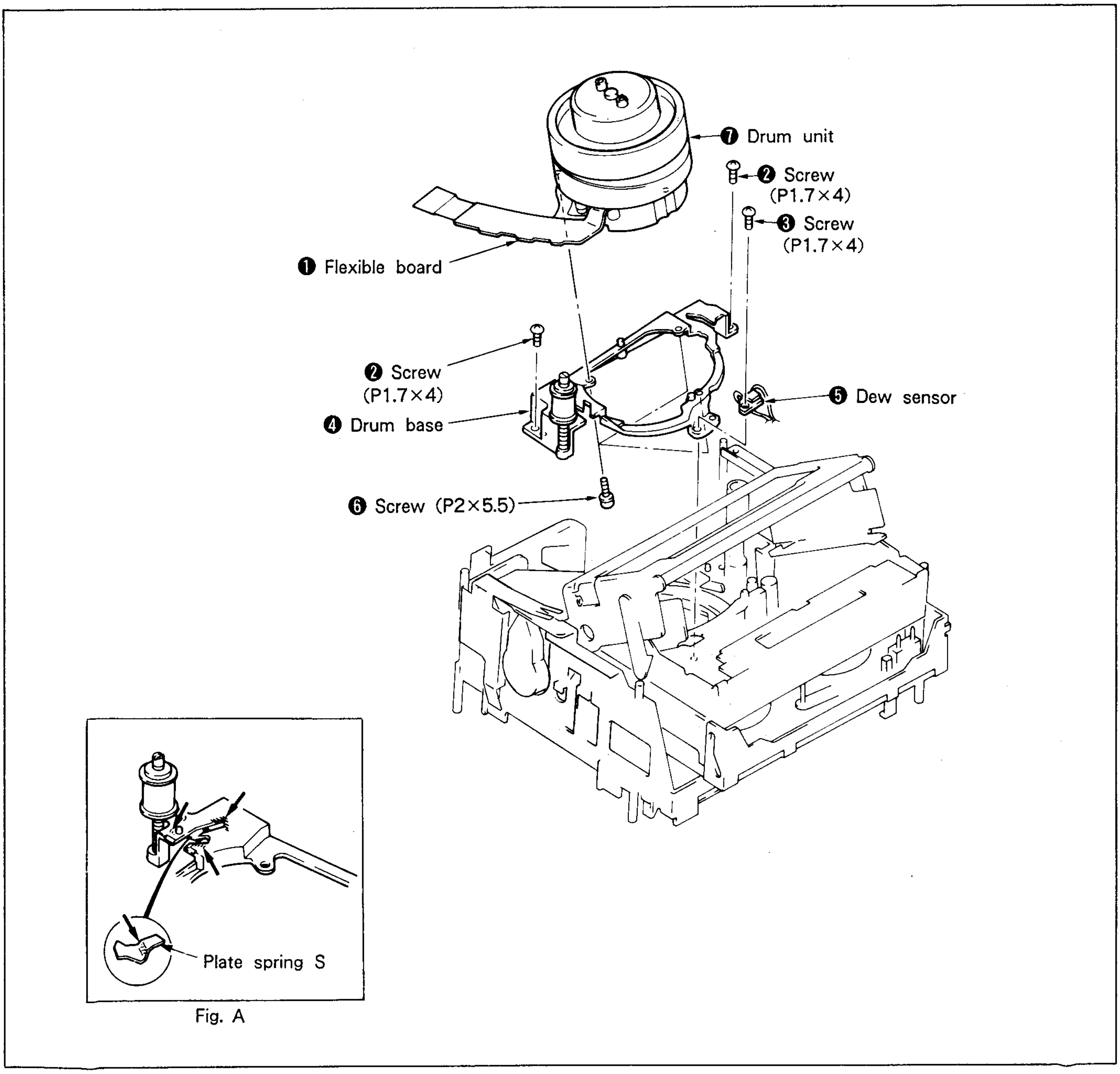

❼ Drum unit
❷ Screw (P1.7×4)
❸ Screw (P1.7×4)
❶ Flexible board
❷ Screw (P1.7×4)
❹ Drum base
❺ Dew sensor
❻ Screw (P2×5.5)
Plate spring S
Fig. A

Fig. 2-37

2-7-25. Rotary Upper Drum Replacement

1. Removal

- If video recording is possible, video record before removal.

1) Remove all solder from the six locations of section ⓐ and use tweezers, or other tool to confirm that the board and pins jutting out from below freely move.
2) Remove the two hexagonal socket screws ❶. (Refer to Fig. 2-38.)
3) Install the jig ❹ (Ref. No.J-10) with the two included screws ❷. When the included hexagonal socket screw ❸ is screwed into the jig ❹, the rotary upper drum will come up. Remove the rotary upper drum ❺. (Refer to Fig. 2-39)

2. Remounting

1) Carefully clean the flange surfaces and planes of the rotary upper drum ❺ touching it and visually check that no blemishes or flaws are left.
2) Insert jig ❼ (Ref. No.J-10) in the drum positioning hole so that the holes of the rotary upper drum ❺ and lower drum coincide, and set the rotary upper drum ❺.

Note : Check that the pins ❽ are projecting above the holes on the printed circuit board of the rotary upper drum. (Refer to Fig. 2-40.)

3) Remove the jig ❼ and lightly push the rotary upper drum ❺ by hand. If the rotary upper drum does not go into the bottom, alternately tighten the two hexagonal socket screws ❶ and temporarily fix them.
4) Reinsert the jig ❼ in the positioning hole ❻ and check that the jig can be smoothly inserted. When the jig cannot be inserted, loosen the two hexagonal socket screws ❶ and reposition according to step 3) of Removal.
5) Tighten the two hexagonal socket screws ❶.
6) Solder the pins ❽ of section ⓐ.

Note : Be careful not to flow solder below the board.
Perform 2-8. TAPE PATH ADJUSTMENT after remounting.

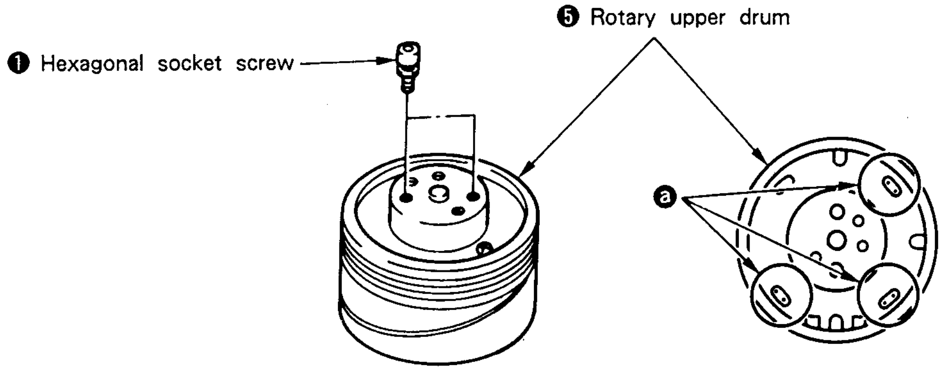


Fig. 2-38

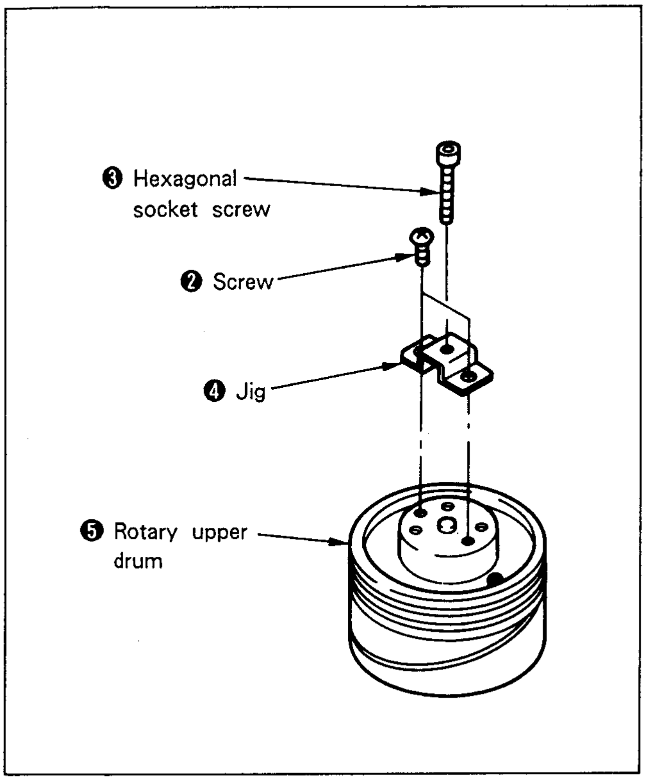

❸ Hexagonal socket screw
❷ Screw
❹ Jig
❺ Rotary upper drum

Fig. 2-39

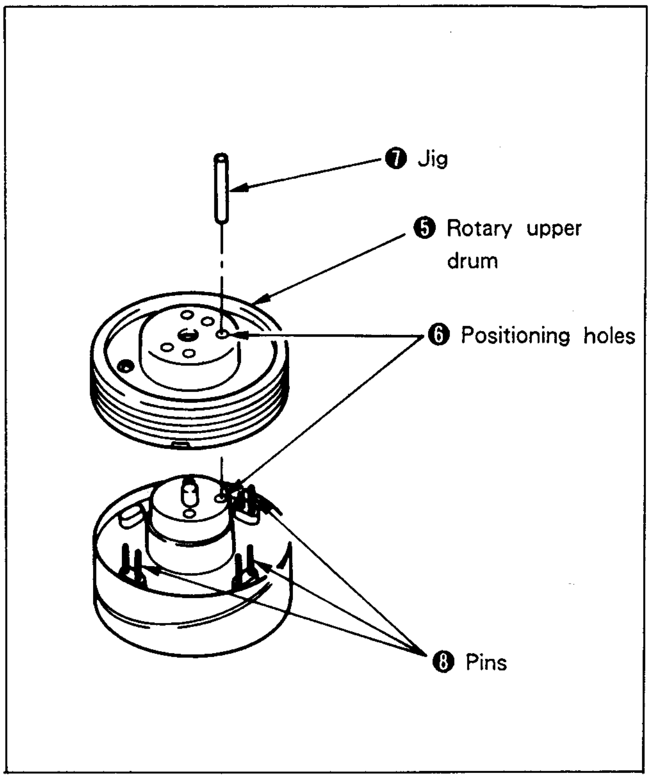

❼ Jig
❺ Rotary upper drum
❻ Positioning holes
❽ Pins

Fig. 2-40

2-7-26. Reel Table Height Check (Refer to Fig. 2-41.)

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.

2. Checking

1) Use calipers or similar tool to confirm that the height from the LS chassis ❶ to the S reel table reel holder plane ❷ and the T reel table reel holder plane ❸, is 6.85±0.15mm.

3. Remounting

1) Remount the oscillating stopper plate as instructed in 2-7-2.
2) Remount the reel lock lever assembly as instructed in 2-7-1.
3) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

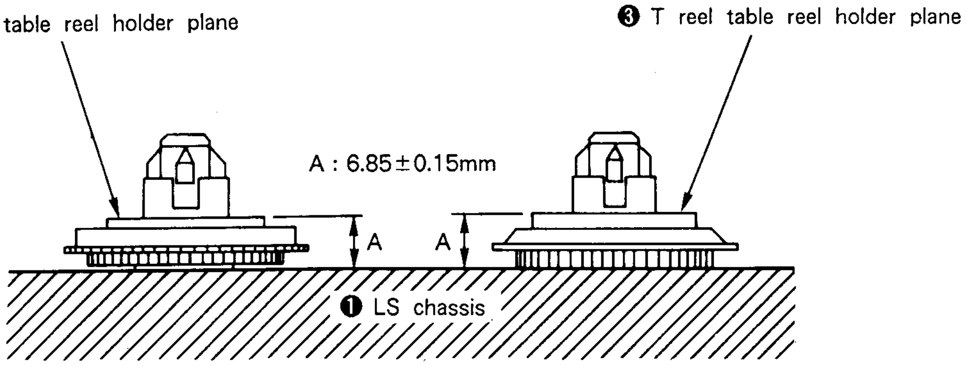

❷ S reel table reel holder plane
❸ T reel table reel holder plane
A : 6.85±0.15mm
A
A
❶ LS chassis

Fig. 2-41

2-7-27. FWD/RVS Torque Check

1) Mount the FWD and RVS winding torque cassette (Ref. No.J-9).
2) Select the FWD mode and check that the torque value on the T reel side is 11 to 19g/cm.
3) Select the rec review mode and check that the torque value on the S reel side is 20 to 32g /cm.
4) Replace the reel tables if the above values are not satisfied.

2-7-28. Adjustment of Tension Regulator Position

1. Removal

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

2. Adjustment

1) Mount a cassette tape, set to the REC mode, and run the tape. (Refer to Fig. 2-4.)
2) With the tape running, check whether the section Ⓐ indicated by the arrow of the TG-1 arm assembly ❶ is 1/3 (section of the arrow Ⓑ) of the internal width of the LS guide ❷. (Refer to Fig. 2-42)
3) If not at the prescribed position, eject the cassette and perform the steps below.
4) Loosen the screw ❸.
5) When the TG-1 arm assembly ❶ is inside of the prescribed position, move the tension regulator band plate section ❹ slightly in the direction of the arrow Ⓒ. When outside the prescribed position, move the tension regulator band plate section ❹ slightly in the direction of the arrow Ⓓ. Fix it in place with the screw ❸. (Refer to Fig. 2-43.)

Note : Use a tape which has been wound to the middle.
Perform steps 4) and 5) above after ejecting the cassette tape.

3. Remounting

1) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

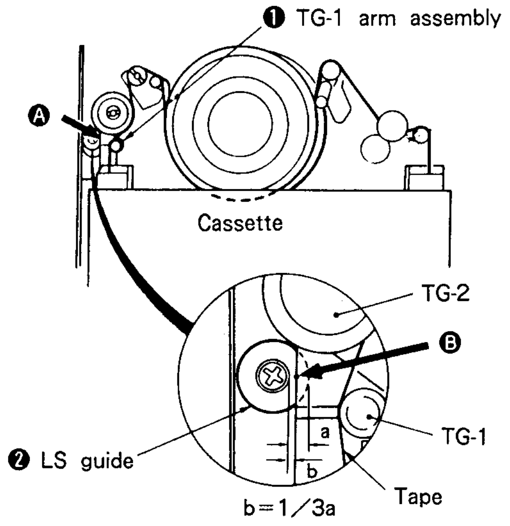


Fig. 2-42

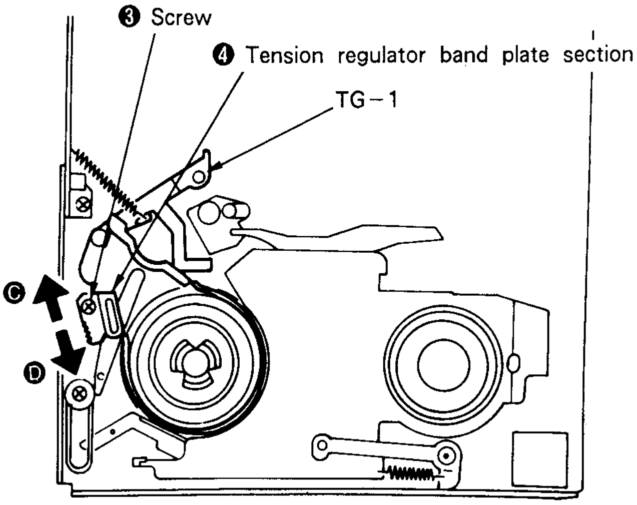


Fig. 2-43

2-7-29. FWD Back Tension Adjustment

1. Removal

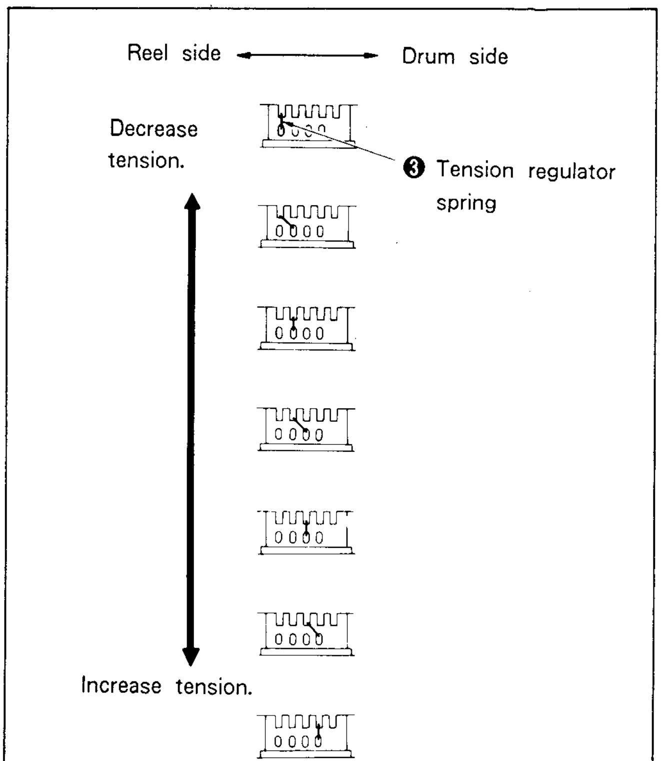
1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

2. Adjusting method

1) Set to the REC mode.
2) Mount the reel for tension measurement (Ref. No.J-7) ❶.
3) Measure the tape tension at the exit using the dial tension gauge (Ref. No.J-6) ❷. Measurement is made with the tape pulled at a speed of 14mm/sec. (Refer to Fig. 2-45.)
4) Change the hook position ❹ of the tension regulator spring ❸ so that the tension is in the range of 6.9 to 7.9g. (Refer to Fig. 2-44. and 2-45.)

3. Remounting

1) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.


Reel side
Drum side
Decrease tension.
❸ Tension regulator spring
Increase tension.

Note : Do not hook the spring closer to the drum side than this position.

Fig. 2-44

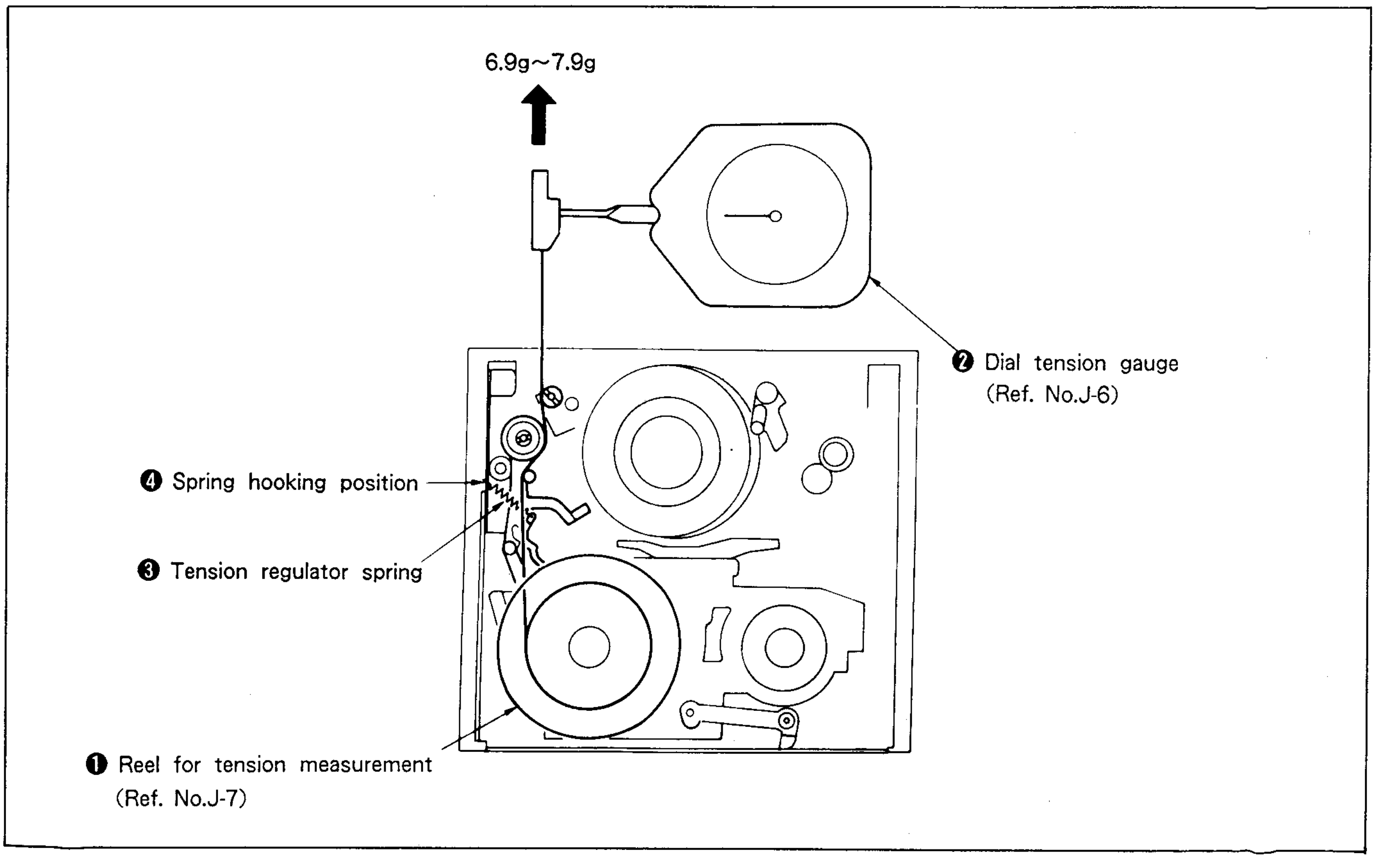

6.9g~7.9g
❷ Dial tension gauge (Ref. No.J-6)
❹ Spring hooking position
❸ Tension regulator spring
❶ Reel for tension measurement (Ref. No.J-7)

Fig. 2-45

2-7-30. TS Gear Assembly (Refer to Fig. 2-46.)

1. **Removal**

1) Remove the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.
2) Remove the reel lock lever assembly as instructed in 2-7-1.
3) Remove the oscillating stopper plate as instructed in 2-7-2.
4) Remove the T reel table assembly as instructed in 2-7-4.
5) Remove the TS gear assembly ❶.

2. **Remounting**

1) Remount the TS gear assembly ❶ on the spindle ❷.
2) Remount the T reel table assembly as instructed in 2-7-4.
3) Remount the oscillating stopper plate as instructed in 2-7-2.
4) Remount the reel lock lever assembly as instructed in 2-7-1.
5) Remount the cassette arm assembly and LS cassette compartment assembly as instructed in 2-1. and 2-2.

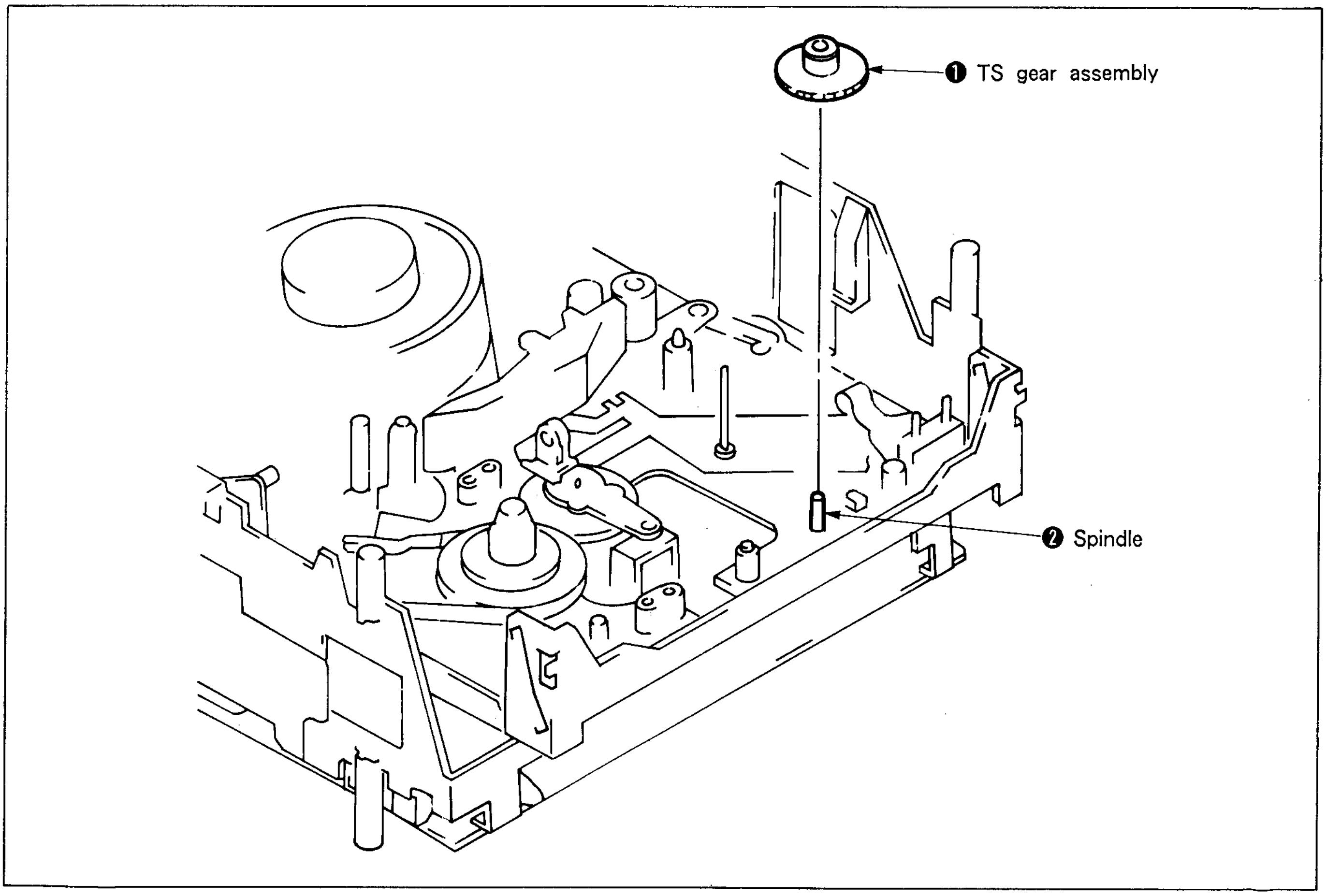


Fig. 2-46

2-8. TAPE PATH ADJUSTMENT

[Shift Track Jig]

8 mm video systems use ATF (automatic tracking finding) for instantaneous control of the tape travel speed based on four pilot signals and high precision tracking. This eliminates the need for tracking adjustment knobs and provides an accurate trace. On the other hand however, adjustment of the tape path system can be difficulty with this ATF system. This is because complete adjustment is not possible as the automatic correction is made by ATF even if the head trace is slightly off.

For this reason, the shift track jig (Ref. No.J-16 : VJ8-0029) is used for adjustment of the tape path system. The shift track jig forcibly releases the ATF and allows precise adjustment of the tape path system as the tracking amount (shift track) can be set manually.

- **Make sure that adjustments of the camera and video sections have been completed before this adjustment.**

2-8-1. Connection with Shift Track Jig

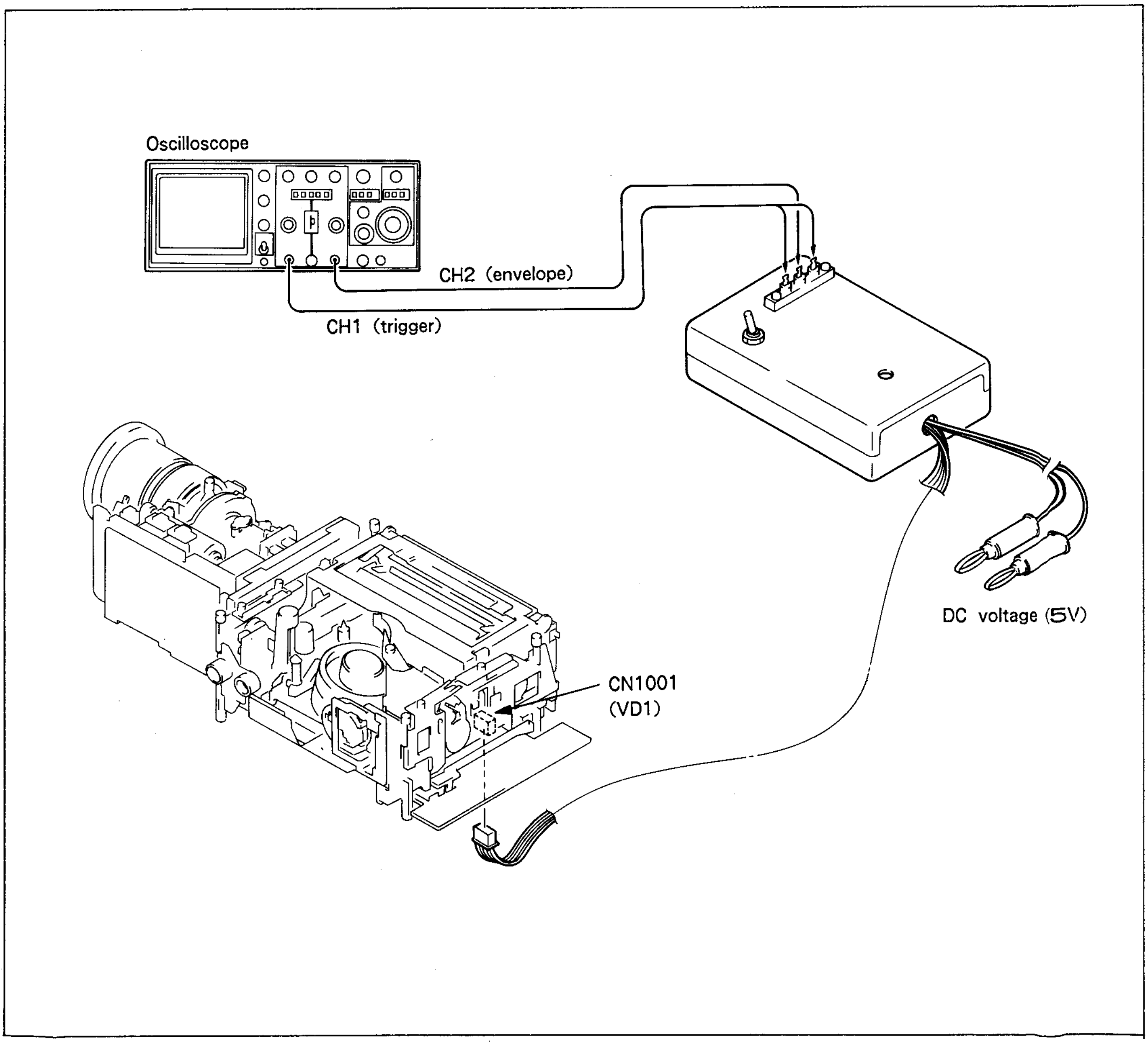


Fig. 2-47

2-8-2. Preparations for Adjustment

1) Clean the parts on which the tape runs (tape guide, drum, capstan spindle, and pinch roller).
2) Connect the shift track jig as shown in 2-8-1. Connection with Shift Track Jig, and set to ON the SHIFT switch of the jig.
3) Connection of oscilloscope
   1CH : PBRF terminal of the shift track jig (CH2 head output)
   2CH : RF SWP terminal of the shift track jig (external trigger)
4) Playback the alignment tape for tracking (WR5-1C).
5) Rotate the LEVEL knob of the shift track jig to set the amplitude of the RF waveform to maximum. (Refer to Fig. 2-48.)

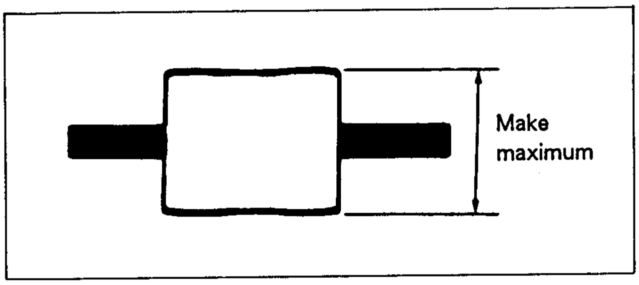

Make maximum

Fig. 2-48

6) Use the oscilloscope to make sure that the RF waveform is flat at both the entrance and exit. (Refer to Fig. 2-49. ⓐ)
   Perform the adjustment described below if not flat.
   When the entrance/exit RF waveform is not flat (Refer to ⓑ and ⓒ in Fig. 2-49.)
   After performing 2-8-3. Rough Tracking Adjustment, perform 2-8-4. Fine Tracking Adjustment.

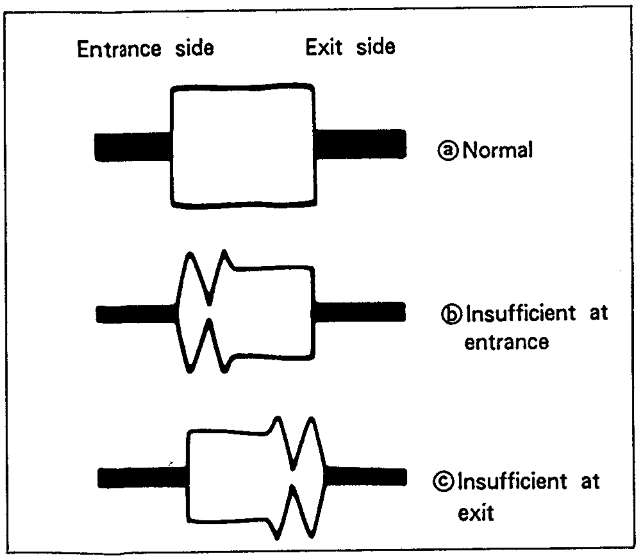

Entrance side
Exit side
ⓐNormal
ⓑInsufficient at entrance
ⓒInsufficient at exit

Fig. 2-49

7) When the RF waveform is normal, perform 2-8-8. Checking After Adjustment.

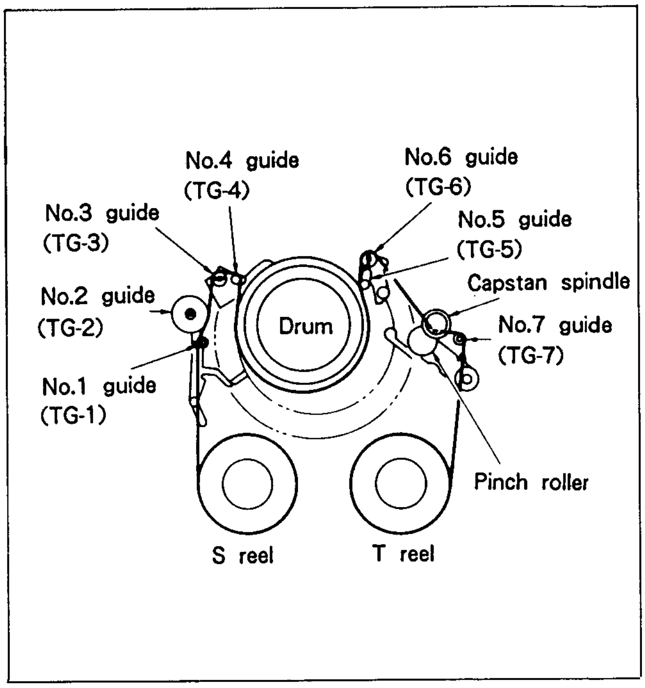

No.4 guide (TG-4)
No.6 guide (TG-6)
No.3 guide (TG-3)
No.5 guide (TG-5)
Capstan spindle
No.2 guide (TG-2)
Drum
No.7 guide (TG-7)
No.1 guide (TG-1)
Pinch roller
S reel
T reel

Fig. 2-50 Layout of Tape Guides

2-8-3. Rough Tracking Adjustment

1) Playback the alignment tape for tracking.
2) Rotate the LEVEL knob of the shift track jig to set the amplitude of the RF waveform to maximum. (Refer to Fig. 2-48.)
3) Loosen the lock screw ❶ of the No.3 guide (TG-3) and rotate the No.3 guide to make the waveform at the entrance flat. (Refer to Fig. 2-51.)
4) Loosen the lock screw ❷ of the No.6 guide (TG-6) and rotate the No.6 guide to make the waveform at the exit flat. (Refer to Fig. 2-52.)

Note : If the lock screws are loosened too much, the guides will move immediately.

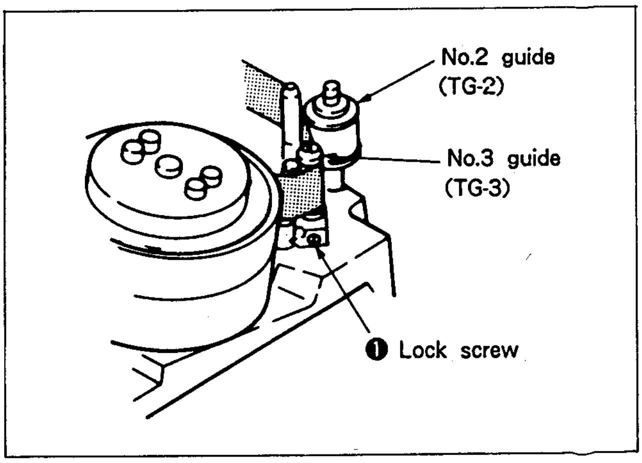

No.2 guide (TG-2)
No.3 guide (TG-3)
❶ Lock screw

Fig. 2-51

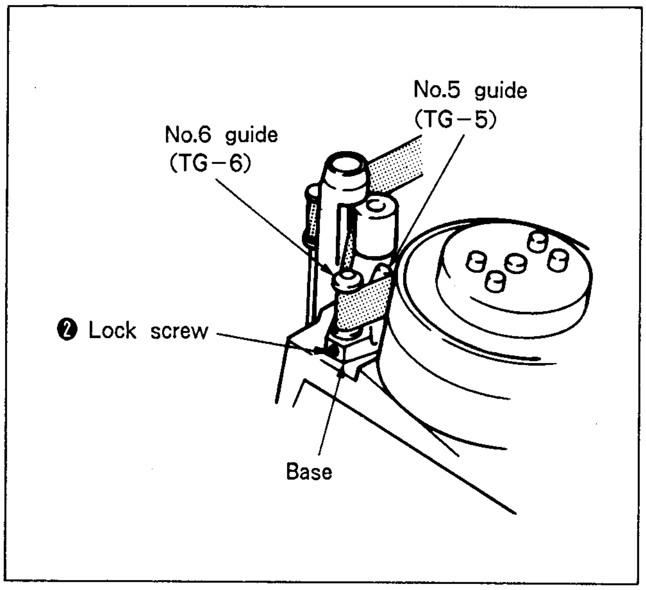


Fig. 2-52

2-8-4. Fine Tracking Adjustment

1) Playback the alignment tape for tracking, and rotate the LEVEL knob of the shift track jig to set the amplitude of the RF waveform to 2/3 of maximum. (Refer to Fig. 2-53.)

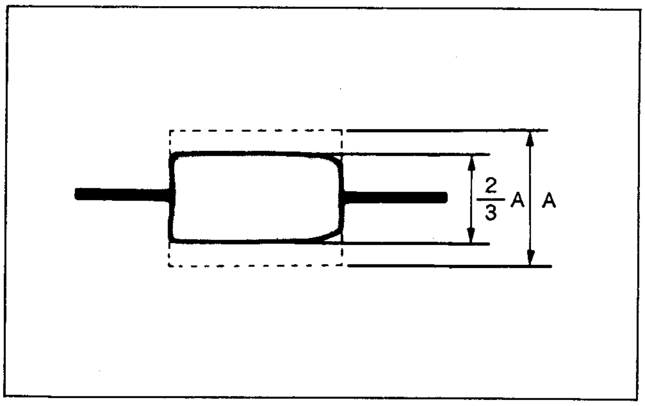


Fig. 2-53

2) Check whether the waveform is flat. If not flat, rotate the No.3 guide (TG-3) and No.6 guide (TG-6) to make flat. (Refer to Fig. 2-51. and 2-52.)
3) Tighten the lock screw of the No.3 guide to lock the No.3 guide in place.
   Make sure that the waveform at the entrance does not change when the screw is tightened.
4) Tighten the lock screw of the No.6 guide to lock the No.6 guide in place.
   Make sure that the waveform at the exit does not change when the screw is tightened.

Note: When tightening the No.6 lock screw, lightly hold the base while rotating the lock screw. This prevents the tip of the No.5 guide (TG-5) from coming into contact with the drum. (Refer to Fig. 2-52.)

2-8-5. No.2 Guide (TG-2) Adjustment

Adjust after performing the height presetting when the No.2 guide was rotated or replaced.

No.2 guide height presetting

1) Tighten the TG-2 nut so that the slit section has the same height as the upper plane of the TG-2 spindle. (Refer to ⓐ in Fig. 2-54.)

Note : Preset the height after removing all of the screw locking compound.

2) Rotate the TG-2 nut 180° in the clockwise direction. (Refer to ⓑ in Fig. 2-54.)

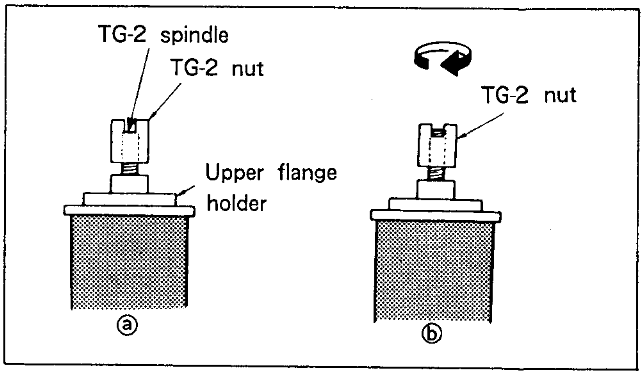


Fig. 2-54

No.2 guide (TG-2) adjustment

1) Playback the alignment tape for tracking.
2) Turn OFF the SHIFT switch of the shift track jig.
3) Check the waveform in the REV mode. (Refer to ⓐ in Fig. 2-55.)
   - When the waveform is not normal, preset the No.2 guide height and perform the adjustment described below. (Refer to ⓐ in Fig. 2-55.)

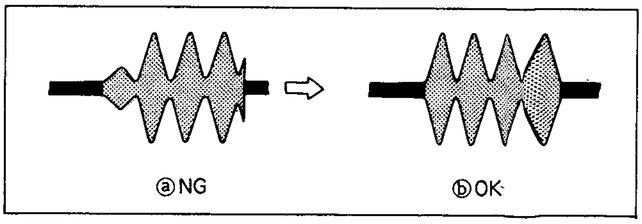


Fig. 2-55

4) Perform step 3) again after rotating the TG-2 nut 90° in the clockwise direction. Repeat steps 3) and 4) until the waveform is normal.
   Make sure that the tracking waveform (Fig. 2-53.) does not change at this time. If it changes, perform entrance fine adjustment and repeat step 3).
5) Tighten the lock screw of the No.3 guide (TG-3). Make sure that the entrance waveform does not change at this time.
6) Apply a screw locking compound to the No.2 guide (TG-2).

2-8-6. No.7 Guide (TG-7) Adjustment

1) Playback the alignment tape for tracking and set to the REV mode.
2) Make sure that there is no bending between the No.6 guide (TG-6) and capstan. (Refer to Fig. 2-56.)
   If there is a bending in the tape, rotate the No. 7 guide (TG-7) to eliminate.
3) Set to playback again and make sure that there is no bending between the No.7 guide (TG-7) and capstan. The specified value is less than 0.5mm. If there is a bending in the tape, rotate the No.7 guide (TG-7) to eliminate.

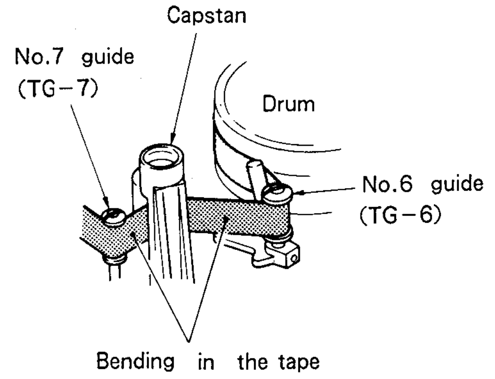


Fig. 2-56

2-8-7. CUE and REV Waveform Confirmation

1) Playback the alignment tape for tracking and set to the REV mode.
   Check that the pitch between the peaks of the waveform is even. (Refer to Fig. 2-57.)
   If not even, perform 2-8-4. Fine Tracking Adjustment and 2-8-5. No.2 Guide Adjustment.
2) Set to the CUE mode. Check that the pitch between the peaks of the waveform is even. (Refer to Fig. 2-57.)
   If not even, perform 2-8-4. Fine Tracking Adjustment.

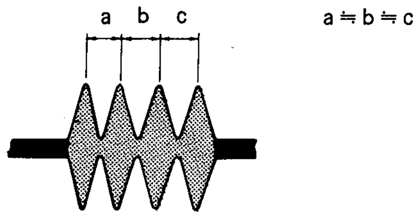


Fig. 2-57

2-8-8. Check After Adjustment

1. Tracking check

1) Play back the alignment tape for tracking, turn ON the SHIFT switch of the shift track jig if not ON, and rotate the LEVEL knob of the shift track jig to set the amplitude of the RF waveform to 2/3 of maximum. (Refer to Fig. 2-58.)
2) Make sure that the minimum value (EMIN) of the amplitude is at least 75% of the maximum value (EMAX). (Refer to Fig. 2-59.)
3) Make sure that there are no major changes in the waveform. (Refer to Fig. 2-60.)

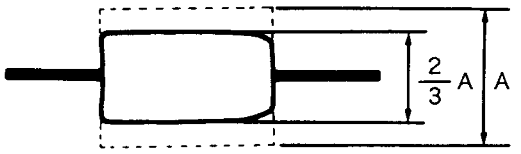


Fig. 2-58

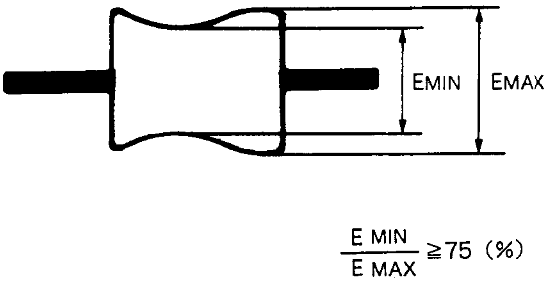


Fig. 2-59

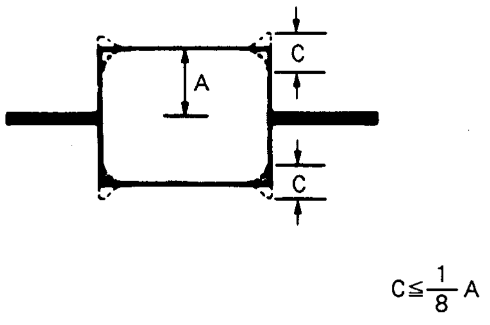


Fig. 2-60

2. Start Check

1) Playback the alignment tape for tracking.
2) Rotate the LEVEL knob of the shift track jig to set the amplitude of the RF waveform to maximum.
3) Reload again after ejecting the tape.
4) Set to the playback mode and make sure that the RF waveform becomes level within 1 second. Make sure that there is no tape bending in the vicinity of the pinch roller. (Refer to Fig. 2-61.)
5) Perform playback after CUE/REV and FF/REW and make sure that the RF waveform becomes level within 1 second. Make sure that there is no tape bending in the vicinity of the pinch roller.
6) Repeats the checks described in 3) through 5) above.

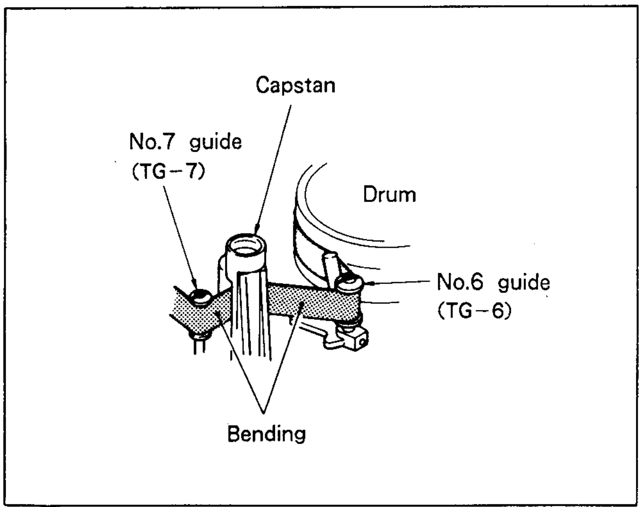

Capstan
No.7 guide
(TG-7)
Drum
No.6 guide
(TG-6)
Bending

Fig. 2-61

3. Tape Travel Checking

Set to the playback mode, and make sure that there is no excessive play or curling of the tape in the No.2 guide lower flange, No.3 guide upper flange, and No.6 guide upper flange. Also make sure that there is no excessive play or curling of the tape in the No.7 guide upper and lower flanges. (Refer to Fig. 2-62.)

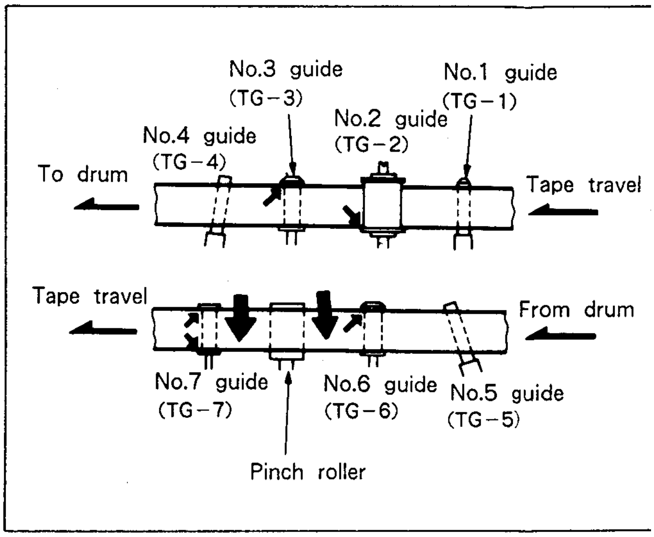

No.3 guide
(TG-3)
No.1 guide
(TG-1)
No.2 guide
(TG-2)
No.4 guide
(TG-4)
To drum
Tape travel
Tape travel
From drum
No.7 guide
(TG-7)
No.6 guide
(TG-6)
No.5 guide
(TG-5)
Pinch roller

Fig. 2-62

3. VIDEO SECTION ADJUSTMENT

[Equipment Used]

1) Monitor TV
2) Dual trace oscilloscope, bandwidth of at least 10MHz, equipped with delay mode (10 : 1 probe used unless specified otherwise)
3) Frequency counter
4) Pattern generator with video output jack
   Note : Use pattern generator which allows chroma signal to be switched off.
5) Regulated power supply
6) Alignment tape (jig)
7) MP tape
8) VJ8-0033 (video signal input jig II) and lead wires

[Alignment Tapes]

Video Frequency Characteristics (WR5-2C) Part code : 8-967-995-16
Operation Checking (WR5-5CSP) Part code : 8-967-995-47

Tape	Contents	Use
Video Frequency Characteristics (WR5-2C)	1. Recording area : Video 2. Recording contents : RF sweep 0 to 10MHz 3. Marker 1, 3.58, 5.5, and 7MHz	Frequency characteristics adjustment
Operation Checking (WR5-5CSP)	1. Recording area : PCM to video 2. Recording contents : Color bars, monoscope (SP) Audio signals (FM), PCM audio signals	Operation checking

[Servicing Jigs]

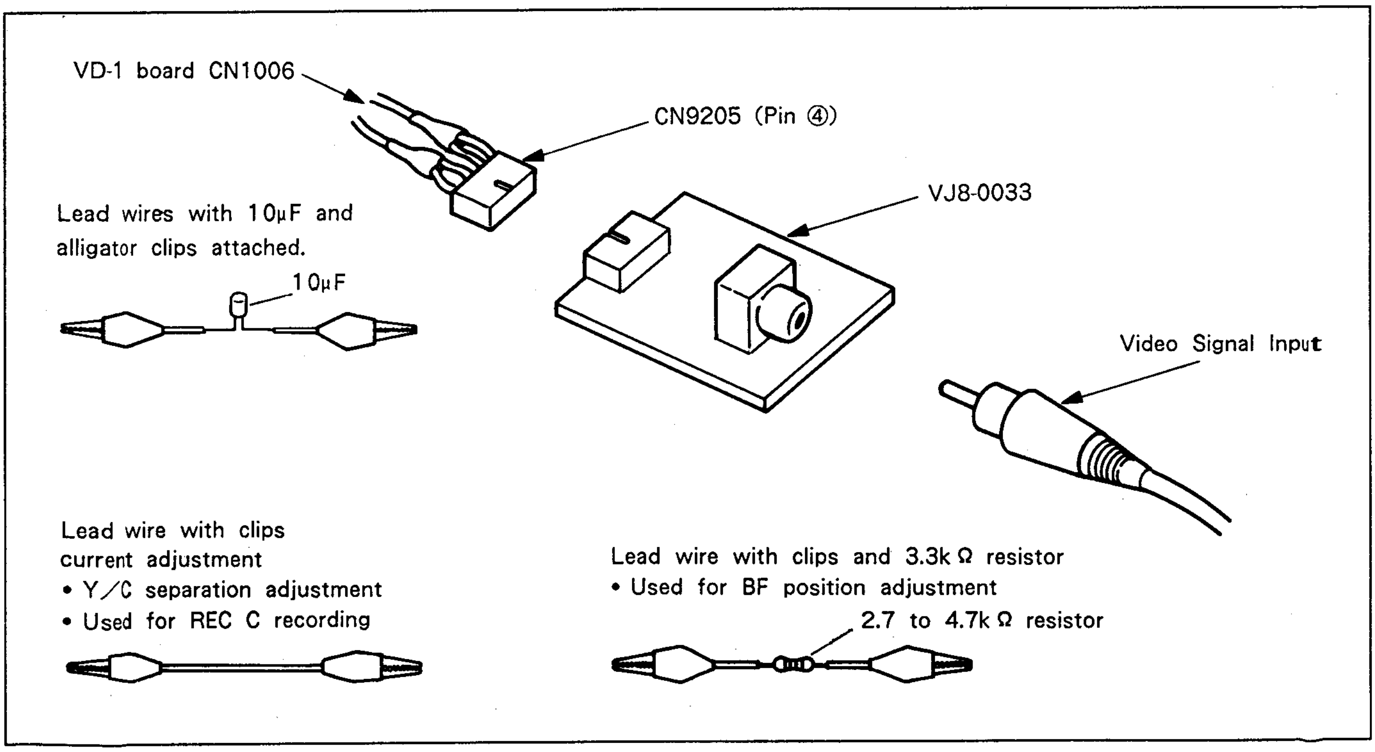

VD-1 board CN1006
CN9205 (Pin ④)
VJ8-0033
Lead wires with 10μF and alligator clips attached.
10μF
Video Signal Input
Lead wire with clips current adjustment
• Y/C separation adjustment
• Used for REC C recording
Lead wire with clips and 3.3kΩ resistor
• Used for BF position adjustment
2.7 to 4.7kΩ resistor

Fig. 3-1.

[Connection of Equipment for Adjustment]

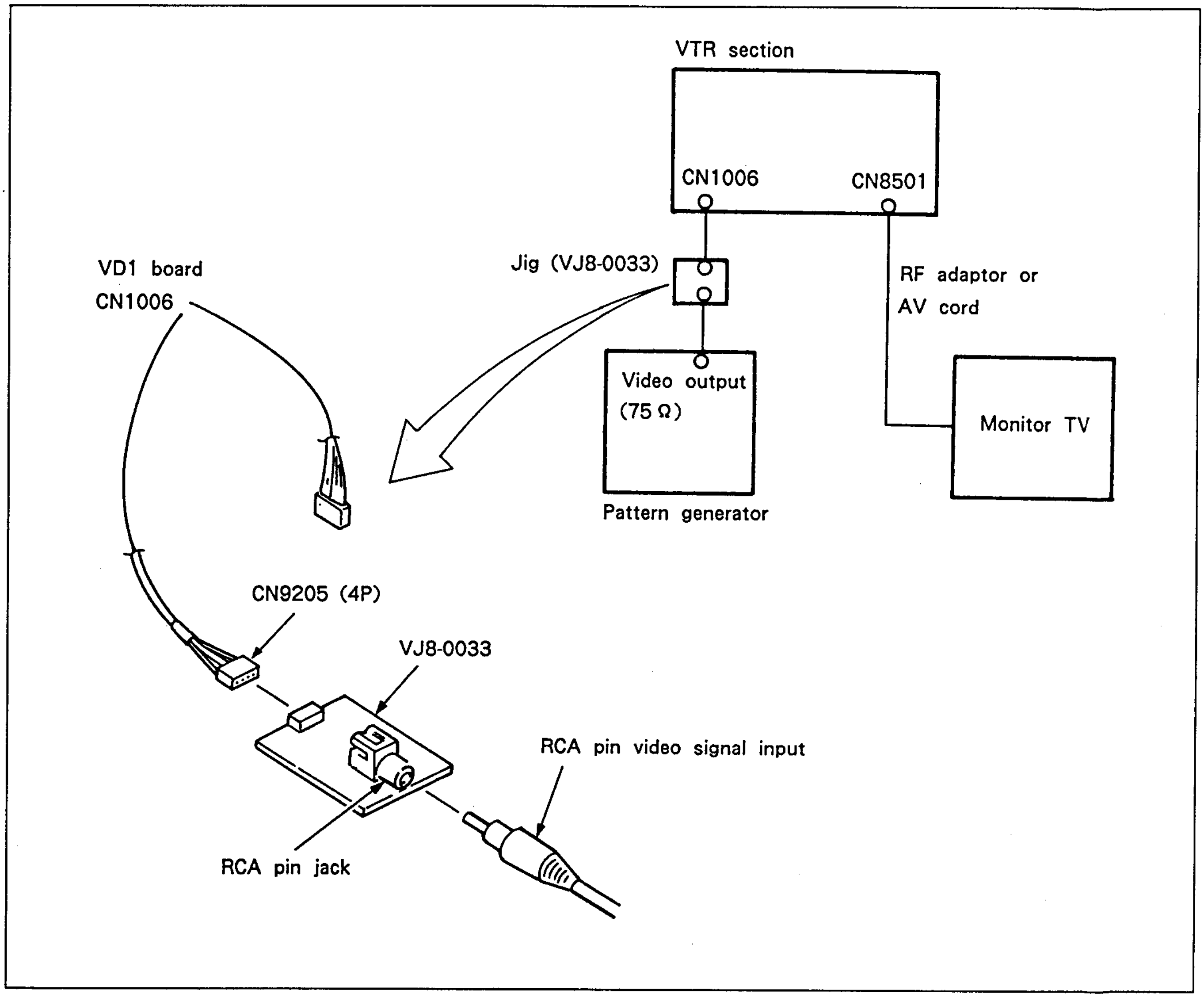

VTR section
CN1006
CN8501
VD1 board
CN1006
Jig (VJ8-0033)
RF adaptor or
AV cord
Video output
(75 Ω)
Monitor TV
Pattern generator
CN9205 (4P)
VJ8-0033
RCA pin video signal input
RCA pin jack

Fig. 3-2. Connection Diagram

[Setup for Adjustment]

As the video signal obtained from the pattern generator is used as the adjustment signal for adjustment of the VTR section, it is necessary that this video output signal be within the specified range.

Connect the oscilloscope to CN1006 Pin ④ (CAMERA Y) on the VD1 board, and confirm that the amplitude of the sync signal of the video signal is approximately 0.3V, the amplitude of the video section is approximately 0.7V, and the amplitude of the burst signal is approximately 0.3V and flat. Also confirm that the ratio of the levels of the burst signal and "red" signals is 0.30 : 0.66.

The video signal (color bar) used for adjustment of the VTR section is shown in Fig. 3-3.

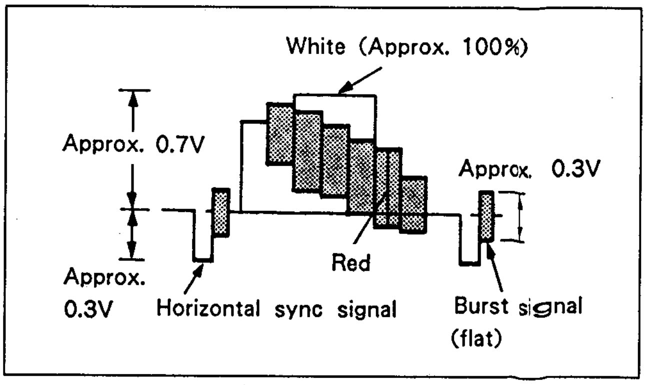

White (Approx. 100%)
Approx. 0.7V
Approx. 0.3V
Approx.
0.3V
Red
Horizontal sync signal
Burst signal
(flat)

Fig. 3-3. Color Bar Signal of Pattern Generator

3-1. SYSTEM CONTROL ADJUSTMENT

3-1-1. Lithium Battery Voltage Drop Detection Voltage Adjustment (SY1 and SY2 Boards)

Digital voltmeter : TP3001 (SY1)
TP3103 (GND/SY2)

Adjusting method :

Adjust with SVR3001 to 2.70±0.01Vdc.

3-1-2. H sync Oscillation Frequency Adjustment (SY2 and CA2 Boards)

Mode : E-E
Remove CN9205 on the CA2 board.
Frequency counter : TP3104 (SY2)
TP3103 (GND/SY2)

Adjusting method :

Adjust with SVR3101 to 15.7±0.1kHz.

3-1-3. On-Screen Character Position Adjustment (SY2 and VD1 Boards)

Mode : E-E
Oscilloscope CH1 : TP3104 (SY2/for trigger)
CH2 : TP1002 (VD1/VIDEO OUT)

Adjusting method :

1) Place the lens cap over the camera lens (all black subject).
2) Press the date ON/OFF button (SY2) until the date appears.
3) Rotate CT3104 (SY2) and adjust until the time difference between the falling edge of CH1 and the pulse of CH2 becomes 8.5 μ ±0.5 μ sec.

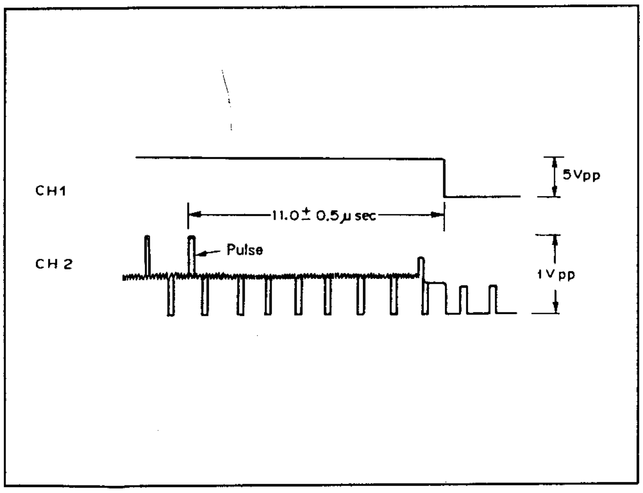


Fig. 3-4. On-Screen Character Position Adjustment

3-1-4. Crystal Oscillation Frequency Adjustment for Clock (SY2 Board)

Frequency counter : TP3101 (SY2)
(Use a frequency counter which is capable of PERIOD measurement and which displays at least 6 digits with time base of 10^3)
: TP3102 (GND/SY2)

Adjusting method :

1) Connect TP3102 and TP3103 on the SY2 board using a jumper wire.
2) Hold down the date ON/OFF button (SY2) for at least 2 seconds.
3) Adjust with CT3103 (SY2) to 488.281±0.002 μ sec.

3-1-5. Battery Failure Adjustment (SV1 Board)

Make sure that there is no tape in the tape holder when performing this adjustment. A regulated power supply, digital voltmeter, and shorting wire are needed for this adjustment.

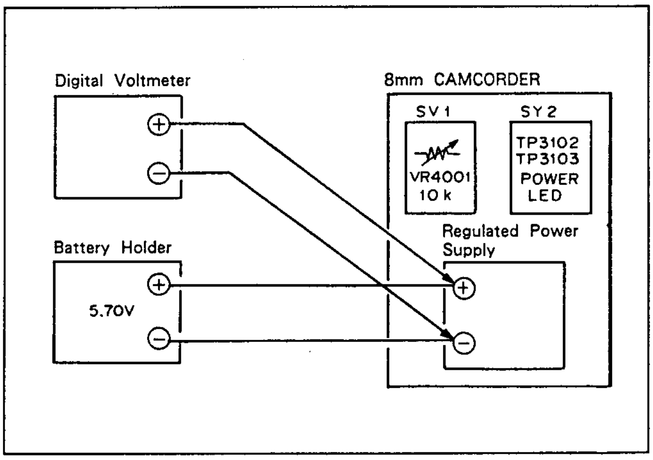


Fig. 3-5. Battery Failure Adjustment

Adjusting method :

1) Connect the regulated power supply and digital voltmeter as shown in Fig. 3-5., and short TP3102 and TP3103. (Set the regulated power supply to 5.70V at this time.)
2) Press the power switch of the 8mm CAMCORDER to turn on the power.
3) Rotate the trimmer SVR4001 on the SV1 board and stop at the position where the POWER LED flashes (becomes fainter and less distinct).
[When the trimmer is rotated in the counterclockwise direction, the LED goes out, and when rotated in the clockwise direction, the LED lights up. It flashes at a position between these two.]
4) Remove the jumper wire for shorting.

3-2. SERVO SYSTEM ADJUSTMENT

3-2-1. Capstan Speed Adjustment (SV1 Board)

Mode : Recording

Oscilloscope CH1 : TP4003 (MCPWM) on SV1 board

GND : Pin ① of CN1001 (VD1)

Adjusting method :

Adjust the duty of CH1 to 50±2% using SVR4301 on the SV1 board.

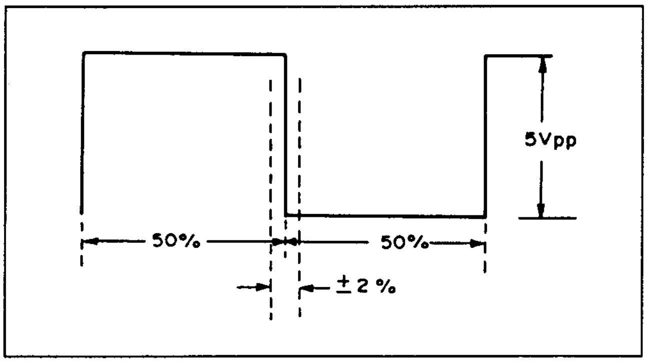


Fig. 3-6. Capstan Speed Adjustment

3-2-2. Switching Position Adjustment (VD1 Board)

Mode : Playback

Alignment tape : Operation Checking (WR5-5CSP)

Oscilloscope CH1 : TP1002 on VD1 board (LINE OUT)

CH2 : Pin ② of CN1001 on VD1 board (RF SW)

GND : Pin ① of CN1001 on VD1 board

Adjusting method :

Use SVR4003 on the SV1 board to adjust the interval between the rising edge of CH2 and the vertical SYNC signal of CH1 to 6.5±0.3H (410±20 μ sec).

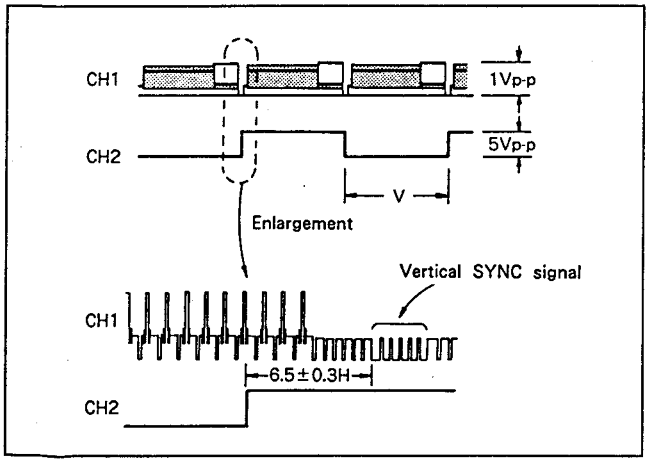


Fig. 3-7. Switching Position Adjustment

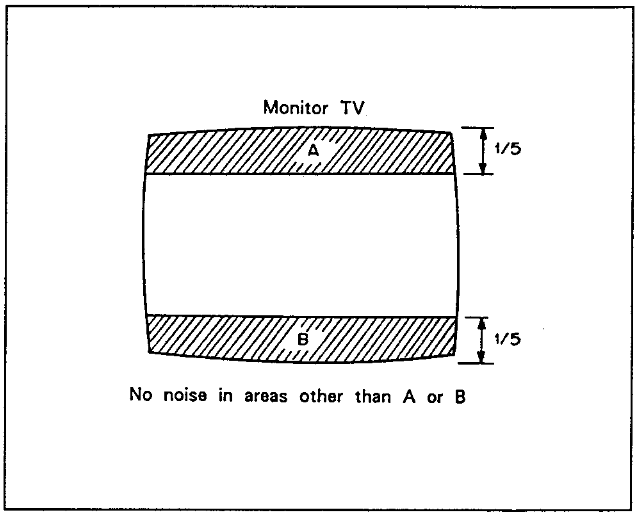
3-2-3. Still Picture Adjustment (SV1 Board)

Mode : Playback

Alignment tape : WR4-4CL (partially wound)

Adjusting method :

1) Connect TP3103 and TP3105 on the SY2 board using a jumper wire. (Test mode : repetition of playback → still → playback)
2) Adjust SVR4002 on the SV1 board in still mode during watching the monitor TV so that the noise is as shown in Fig. 3-8.



No noise in areas other than A or B

Fig. 3-8. Still Picture Adjustment

3-3. VIDEO SYSTEM ADJUSTMENT

In principle, adjust the video system in the following order.

Color video signals fed by a pattern generator are utilized as video input signals for video system adjustment in the Record mode. Check that the SYNC and color burst signals match the standard designated in adjustment setup shown in Fig. 3-3.

[Adjusting Procedure]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) SYNC AGC adjustment
4) Y/C separation adjustment
5) BF position adjustment
6) PB Y level adjustment
7) PB LINE OUT level adjustment
8) Y FM carrier frequency adjustment
9) Y FM deviation adjustment
10) REC Y recording current adjustment
11) REC C recording current adjustment
12) REC AFM recording current adjustment
13) REC ATF recording current adjustment

3-3-1. Playback Frequency Characteristics Adjustment (VD1 Board)

CH-B adjusting elements are shown in [ ].

Mode :	Playback
Alignment tape :	Frequency characteristics adjustment (WR5-2C)
Oscilloscope CH1 :	Pin ⑤ of CN1001 on VD1 board [Pin ⑤ of CN1001]
External trigger :	Pin ② of CN1001 on VD1 board [Pin ② of CN1001]
Trigger slope :	+, [−]

Checking method :

Confirm that the ratio between the 3.58MHz and 5.5MHz levels is 3 : 2.

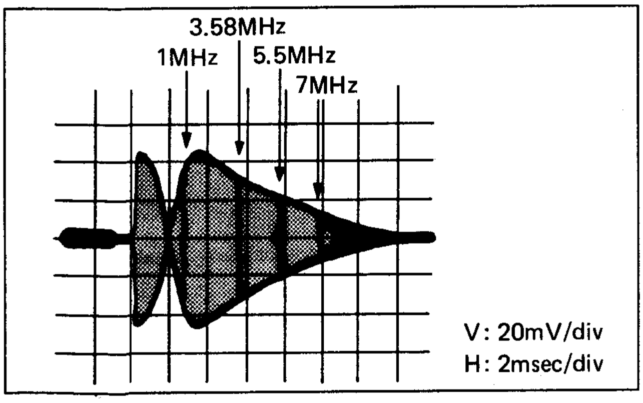


Fig. 3-9. Playback Frequency Characteristics Adjustment

3-3-2. Flying Erase Check

Mode : Recording
Input signal : Arbitrary
Oscilloscope : TP1401 (erase check pin)

Checking method :

Confirm that the oscillation frequency is at least 7.5MHz and the oscillation voltage is at least 7.0 Vp-p.

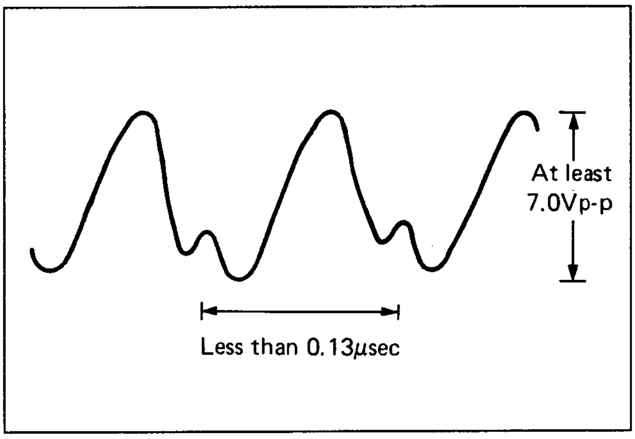


Fig. 3-10. Flying Erase Check

3-3-3. SYNC AGC Adjustment (VD1 board)

Mode : E-E
Input signal : Color bar (composite signal)
Oscilloscope : TP1001 (Pin ⑪ of IC1001)

Adjusting method :

Adjust to 0.5±0.01Vp-p with SVR1001.

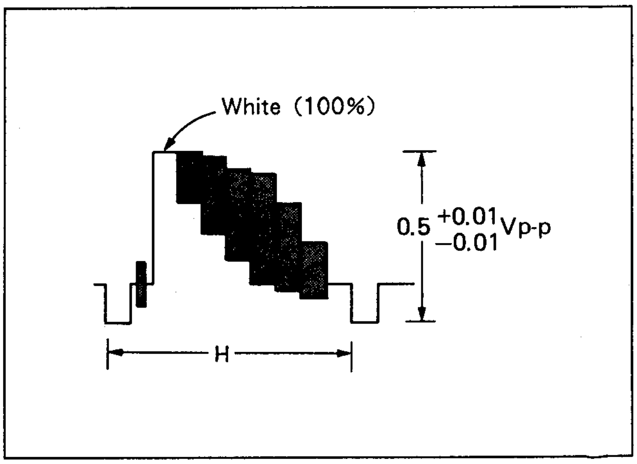


Fig. 3-11. SYNC AGC Adjustment

3-3-4. Y/C Separation Adjustment

Mode : E-E

Input signal : Color bars (composite signal)

Oscilloscope : TP1020 (Pin 31 of IC1003)

Lead wire with attached alligator clips used

Lead wire with attached capacitor and alligator clips used

Adjustment Method :

Connect TP1008 to TP1011 (GND).

Connect TP1021 to (GND) with a capacitor.

Adjust with SVR1002 so that residual chroma component becomes minimum.

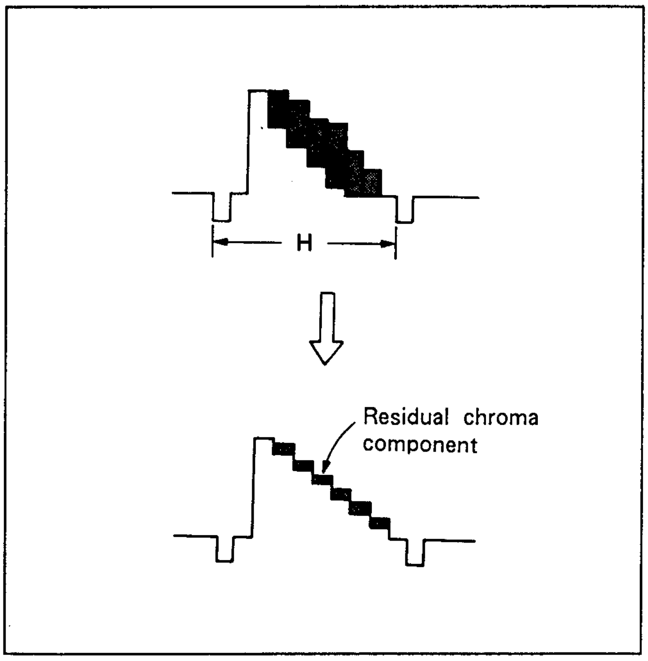


Fig. 3-12. Y/C Separation Adjustment

3-3-5. BF Position Adjustment (VD1 Board)

Mode : E-E

Input signal : Color bar (composite signal)

Oscilloscope : TP1013 (Pin ⑧ of IC1003)

Use lead wire with clips and 3.3k Ω resistor

Adjusting method :

Connect TP1013 and TP1011 (GND) using the lead wire with 3.3 k Ω resistor.

Adjust BF (burst flag) to 6.0±0.1 μ sec using SVR1011.

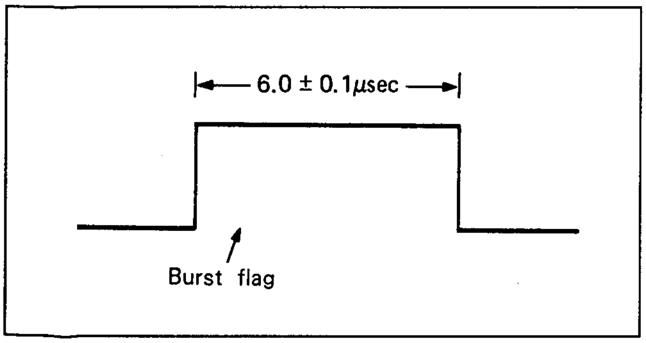


Fig. 3-13. BF Position Adjustment

3-3-6. PB Y Level Adjustment (VD1 Board)

Mode : Playback

Alignment tape : Operation checking (WR5-5CSP)
Color bar portions

Oscilloscope : TP1003 (Pin ㊼ of IC1003)

Adjusting method :

Adjust to 0.5±0.01Vp-p with SVR1005.

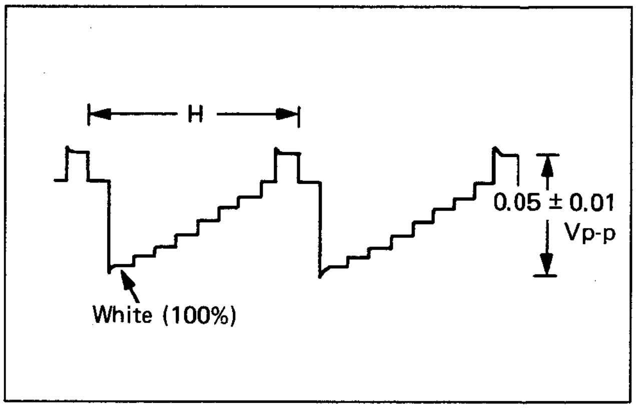


Fig. 3-14. PB Y Level Adjustment

3-3-7. PB LINE OUT Level Adjustment (VD1 Board)

Mode : Playback

Alignment tape : Operation checking (WR5-5CSP)
Color bar portions

Oscilloscope : TP1002 (VIDEO OUT)
The RF adaptor or AV cord should be connected and the video output terminal should be terminated at 75 Ω.

Adjusting method :

Adjust to 1.00±0.02Vp-p with SVR1006.

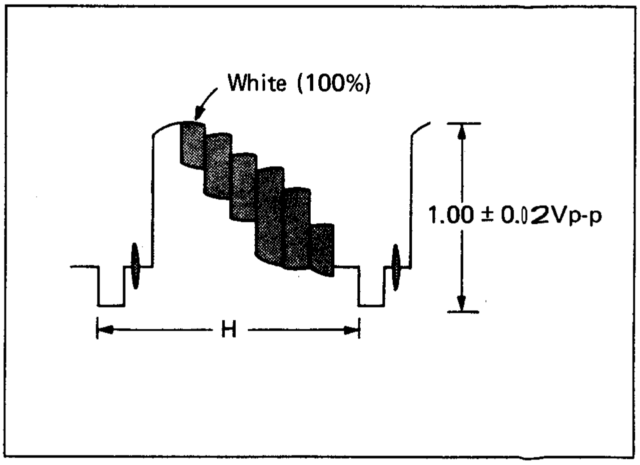


Fig. 3-15. PB LINE OUT Level Adjustment

3-3-8. Y FM Carrier Frequency Adjustment (VD1 Board)

Mode : E-E

Input signal : No signal

Oscilloscope : TP1006

Frequency counter : TP1006

Adjusting method :

Adjust to 4.38±0.05MHz with SVR1003.

Note : When adjusted to 4.38MHz with no signal, the level will be 4.20MHz with signal.

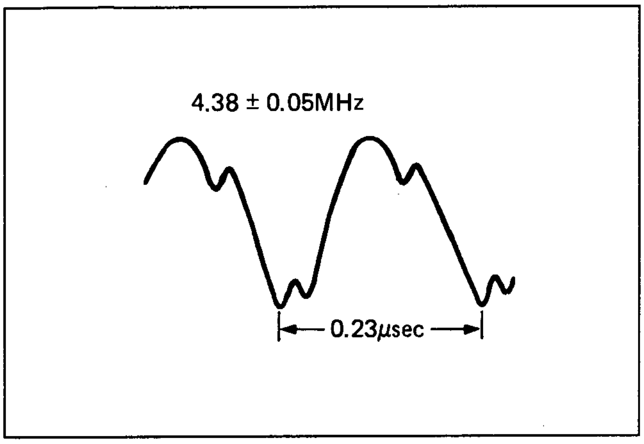


Fig. 3-16. Y FM Carrier Frequency Adjustment

3-3-9. Y FM Deviation Adjustment

Mode : Playback and record

Input signal : Color bar (Y signal only)

Oscilloscope : TP1002 (VIDEO OUT)

Note : 1) The RF adaptor or AV cord should be connected and the video output terminal should be terminated at 75 Ω.

2) Perform this adjustment after SYNC AGC adjustment, PB Y level adjustment, PB LINE OUT level adjustment, Y FM carrier frequency adjustment.

Adjusting method :

1) Record the color bar Y signal.
2) Playback the recorded level.
3) Check the playback level. The specified value is 1.00±0.05Vp-p.
4) If the specified value is not satisfied, repeat steps 1) through 3) after rotating SVR1004 on the VD1 board in the following manner.

	Rotation Direction for SVR1004
When higher than specified value	Counterclockwise direction (↺)
When lower than specified value	Clockwise direction (↻)

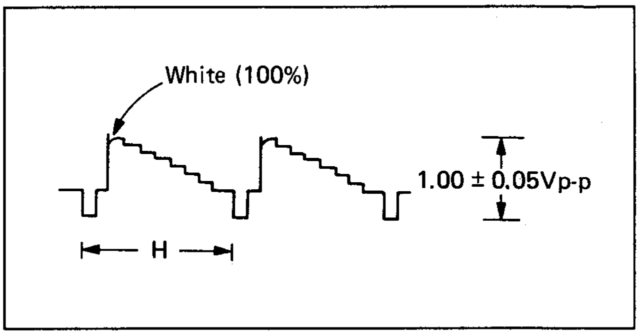


Fig. 3-17. Y FM Deviation Adjustment

3-3-10. REC Y Recording Current Adjustment (VD1 Board)

Mode : Record

Tape : MP type

Input signal : No signal

Oscilloscope : TP1501

Adjusting method :

Adjust to the range of 250 to 270mVp-p with SVR1008.

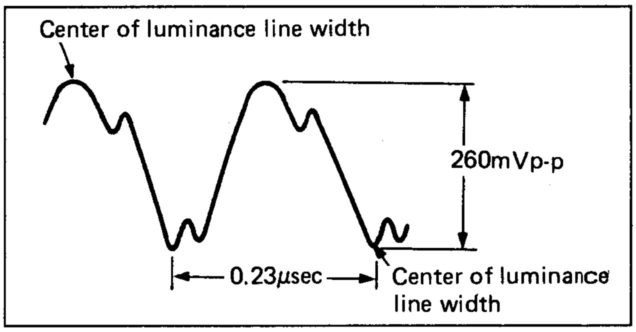


Fig. 3-18. REC Y Recording Current Adjustment

3-3-11. REC C Recording Current Adjustment (VD1 Board)

Mode : Record

Tape : MP type

Input signal : Color bar (composite signal)

Oscilloscope : TP1012

Use lead wire with clips

Adjusting method :

Connect TP1008 and TP1011 (GND) with lead wire. Adjust the burst level to 155mVp-p with SVR1007.

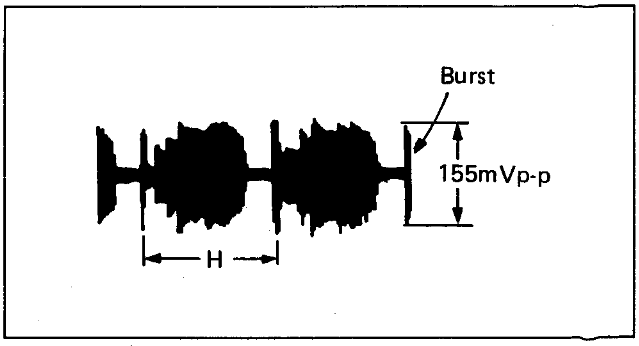


Fig. 3-19. REC C Recording Current Adjustment

3-3-12. REC AFM Recording Current Adjustment (VD1 Board)

Mode : Record
Tape : MP type
Input signal : Color bar (composite signal)
Audio input signal : No signal
Oscilloscope : TP1010
Adjusting method :
Adjust to 30mVp-p with SVR1009.

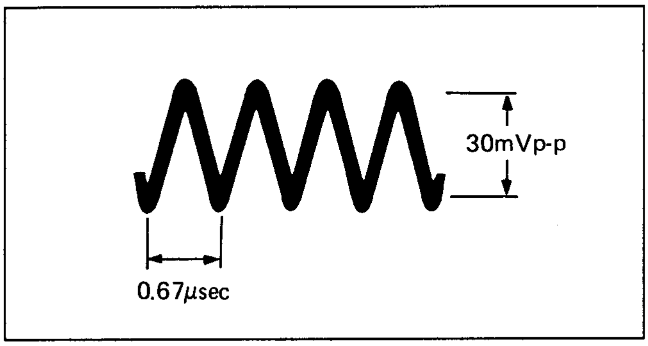


Fig. 3-20. REC AFM Recording Current Adjustment

3-3-13. REC ATF Recording Current Adjustment (VD1 Board)

Mode : Record
Tape : MP type
Input signal : Color bar (composite signal)
Oscilloscope : TP1009
Adjusting method :
Adjust to 210mVp-p with SVR1010.

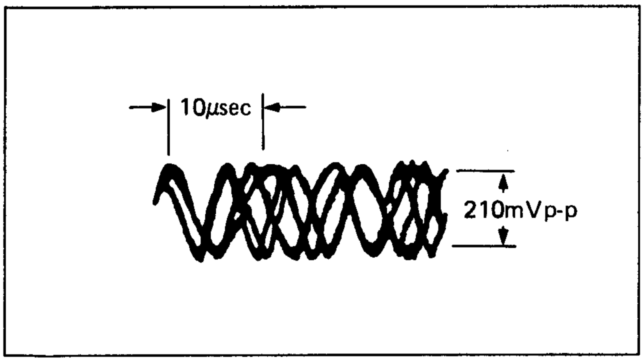


Fig. 3-21. REC ATF Recording Current Adjustment

3-4. AUDIO SYSTEM ADJUSTMENT

3-4-1. Connection of Audio Measuring Instruments

Connect audio-system measuring instruments as shown below in addition to video system measuring instruments.
Beware of induced hum as the audio input has a low level.

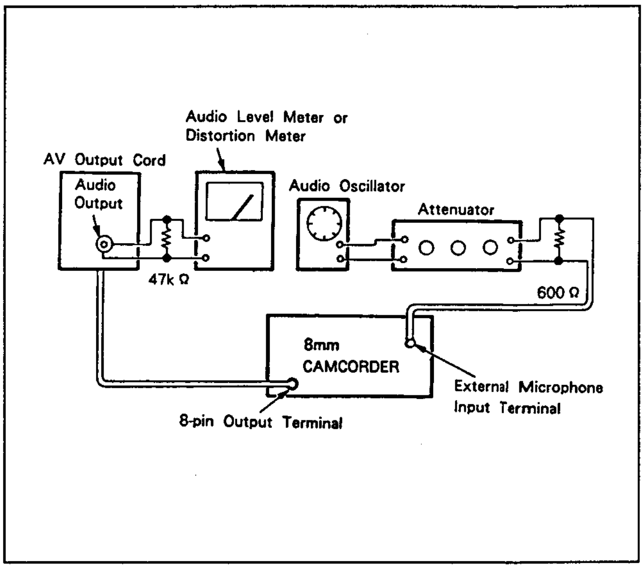

Audio Level Meter or Distortion Meter
AV Output Cord
Audio Output
Audio Oscillator
Attenuator
47k Ω
600 Ω
8mm CAMCORDER
External Microphone Input Terminal
8-pin Output Terminal

Fig. 3-21.

(Adjustment Procedure)

1) AFM carrier frequency check
2) AFM deviation check
3) E-E output level check
4) Overall level characteristic check
5) Overall distortion factor check
6) Overall S/N check

3-4-2. AFM Carrier Frequency Check (VD1 Board)

Mode : RECORD
Audio input signals : None
Frequency counter : Pin ⑪ of IC2001
(Checking Method)
The frequency must be 1.500±0.01MHz.

3-4-3. AFM Deviation Check (VD1 Board)

Mode : PLAYBACK
Playback tape : Operation checking (WR5-5CSP)
(Checking Method)
The audio output level must be −6±2dBs.

3-4-4. E-E Output Level Check

Mode : E-E or RECORD
Audio input signals : 400Hz, −65dBs

(Checking Method)

The audio output level must be −6±3dBs.

3-4-5. Overall Level Characteristic Check

Mode : Self-recording and PLAYBACK
Tape : MP type
Audio input signals : 400Hz, −65dBs

(Checking Method)

1) Record.
2) Playback recorded portions.
3) The audio output level must be −6±3dBs.

3-4-6. Overall Distortion Check

Mode : Self-recording and PLAYBACK
Tape : MP type
Audio input signals : 400Hz, −65dBs

(Checking Method)

1) Record.
2) Playback recorded portions.
3) The distortion must be less than 1.0%.

3-4-7. Overall S/N Check

Mode : Self-recording and PLAYBACK
Tape : MP type
Audio input signals : None (Short external microphone input terminal)

(Checking Method)

1) Record.
2) Playback recorded portions.
3) Make sure that the dBs value for 3-4-5 (Playback level) minus the dBs value for the playback level of this step is 40dB or greater.

4. ELECTRONIC VIEWFINDER ADJUSTMENT

4-1. EQUIPMENT

1. Oscilloscope
2. Frequency counter
3. Alignment tapes
   For operation checking (WR5-5CSP)
   Part code 8-967-995-47

4-2. ADJUSTMENT ORDER

Note : Adjustment must be made in the following order.

1. Horizontal oscillation frequency adjustment
2. Viewfinder temporary adjustment
3. Centering adjustment
4. Horizontal size, viewfinder tilt adjustment
5. Vertical size adjustment
6. Contrast adjustment
7. Brightness adjustment
8. Focus adjustment

4-3. HORIZONTAL OSCILLATION FREQUENCY ADJUSTMENT

Mode : E-E
Input signal : No signal
Frequency counter : Checkered area shown in Fig. 4-1.

(Adjustment method)

Adjust to the frequency to 16000±30Hz with VR9901.

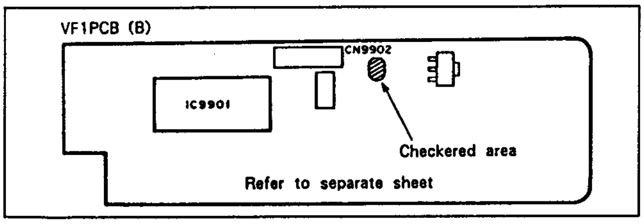


Fig. 4-1.

4-4. VIEWFINDER TEMPORARY ADJUSTMENT

Mode : Playback
Alignment tape : For operation checking (WR5-5CSP) (Monoscope section)

(Adjustment method)

1) Rotate VR9904 (BRIGHT) for proper brightness.
2) Rotate VR9902 (V SIZE) for proper picture size.
3) Rotate VR9903 (CONTRAST), VR9904 (BRIGHT), and VR9905 (FOCUS) for proper picture.
4) Move the DY in direction A of Fig. 4-2. to eliminate the gap B.

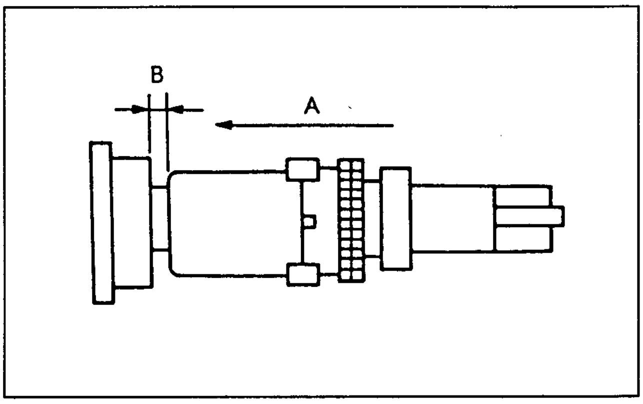


Fig. 4-2.

4-5. CENTERING ADJUSTMENT

Mode : Playback
Alignment tape : For operation checking (WR5-5CSP) (Monoscope section)

(Adjustment method)

1) Rotate the alignment magnet to move the picture to center.
2) Apply lacquer to the centering magnet to fix it in place.

4-6. VIEWFINDER TILT ADJUSTMENT

Mode : Playback
Alignment tape : For operation checking (WR5-5CSP) (Monoscope section)

(Adjustment method)

1) Rotate the deflection coil so that the tilt of the screen is within 0° ±1.5°.
2) Rotate the yoke clamp to the right to fix the deflection coil in place.

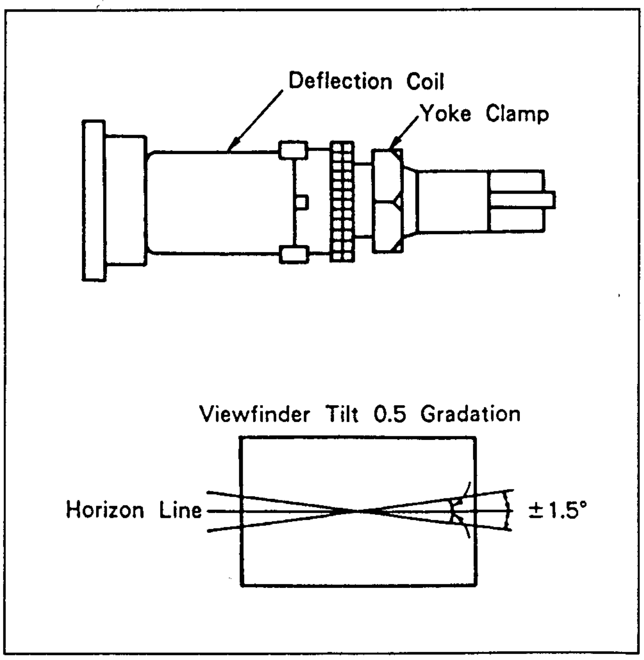


Fig. 4-3.

4-7. VERTICAL SIZE ADJUSTMENT

Mode : Playback

Alignment tape : For operation checking (WR5-5CSP)

(Adjustment method)

Adjust VR9902 so that A and B in Fig. 4-4. are equal (so that circular pattern is a true circle).

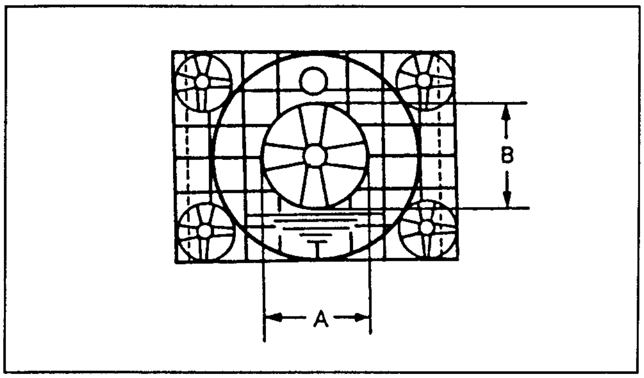


Fig. 4-4.

4-8. CONTRAST ADJUSTMENT

Mode : Playback

Alignment tape : For operation checking (WR5-5CSP) (Monoscope section)

Oscilloscope : Checkered area shown in Fig. 4-5.

(Adjustment method)

Adjust the voltage level to 6±0.1V by rotating VR9903.

Note : This is measured at the right edge of the V period.

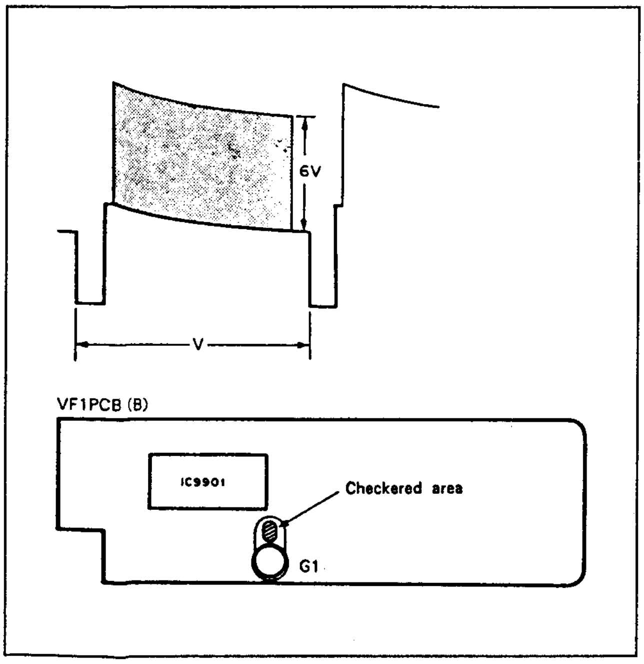


Fig. 4-5.

4-9. BRIGHTNESS ADJUSTMENT

Mode : Playback

Alignment tape : For operation checking (WR5-5CSP)

(Adjustment method)

Rotate VR9904 to adjust for the proper brightness.

4-10. FOCUS ADJUSTMENT

Mode : Playback

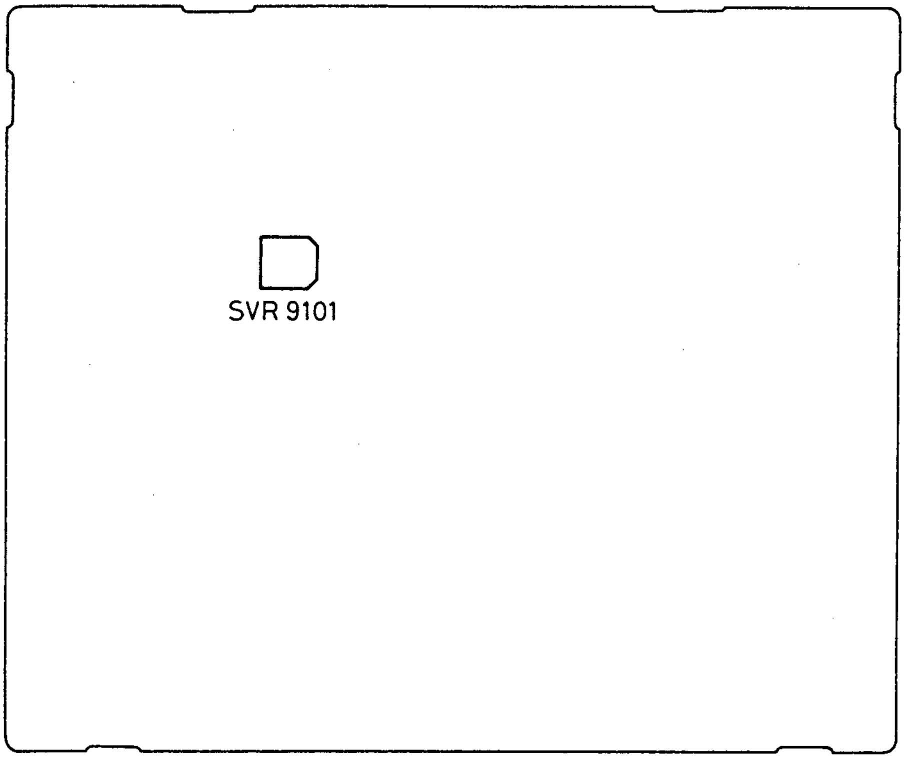
Alignment tape : For operation checking (WR5-5CSP) (Monoscope section)

(Adjustment method)

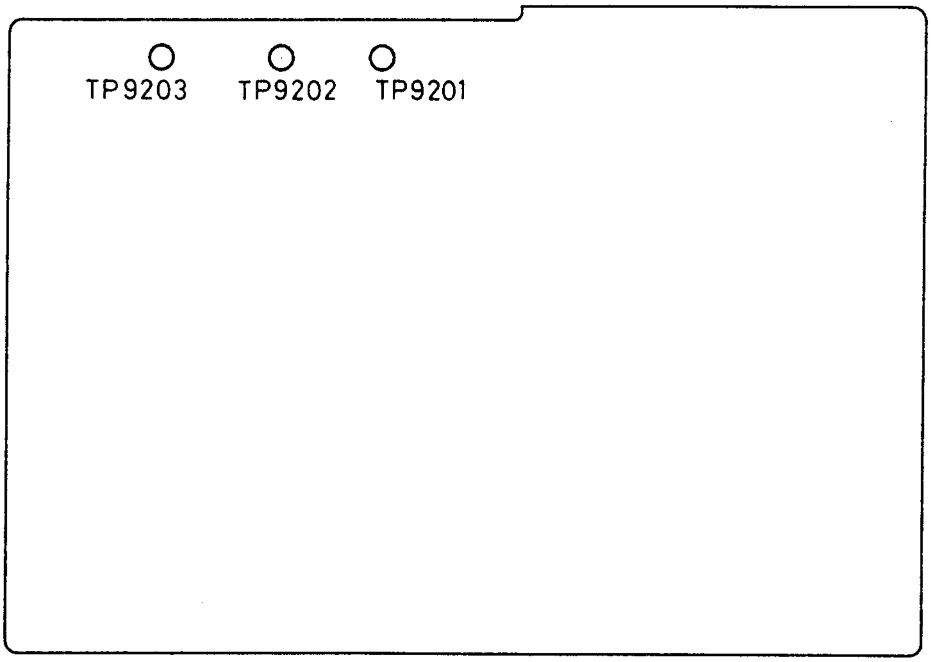
Rotate VR9905 to obtain optimum resolution of the monoscope pattern.

5. TP SVR LAYOUT DIAGRAM

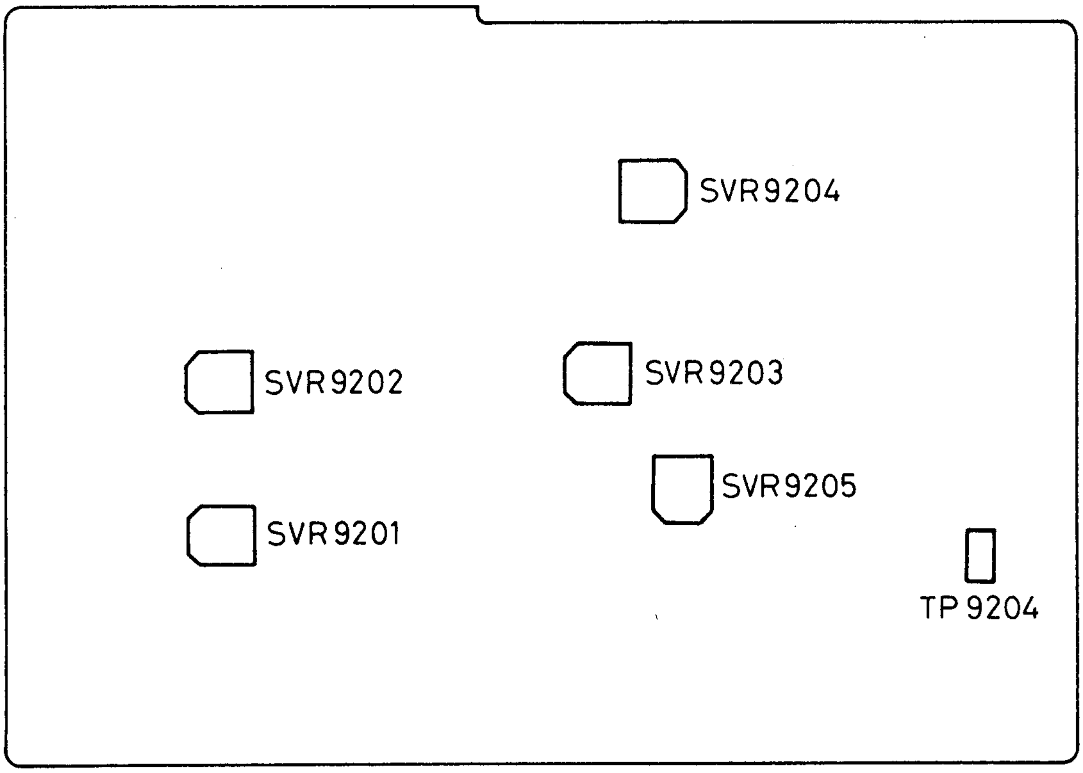
CA1 BOARD (B SIDE)



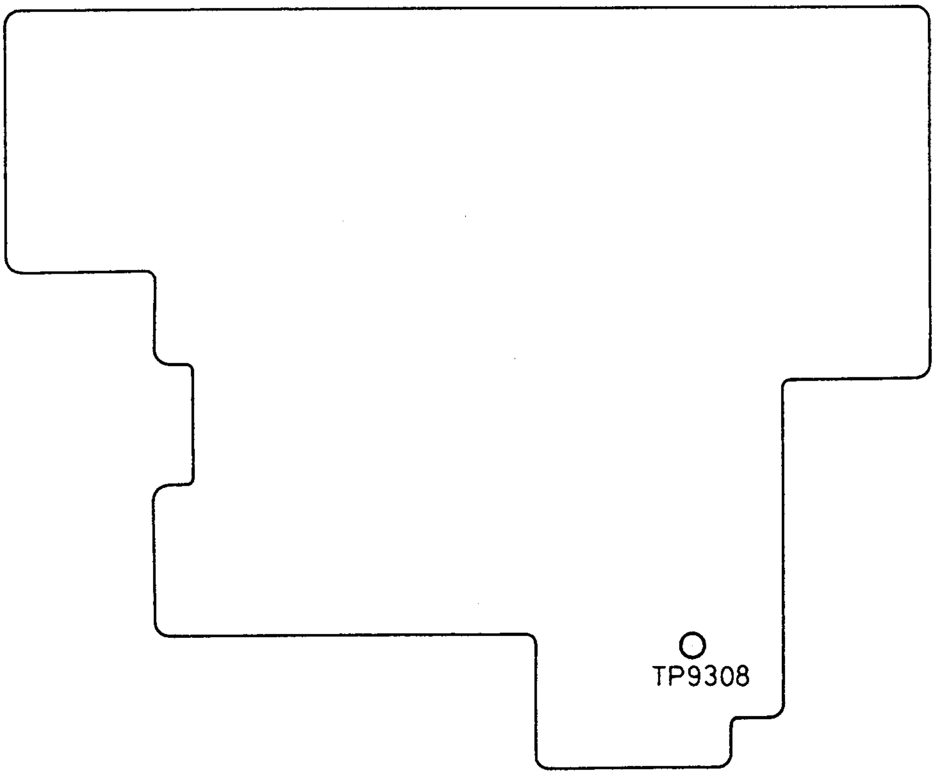
CA2 BOARD (A SIDE)


TP9203
TP9202
TP9201

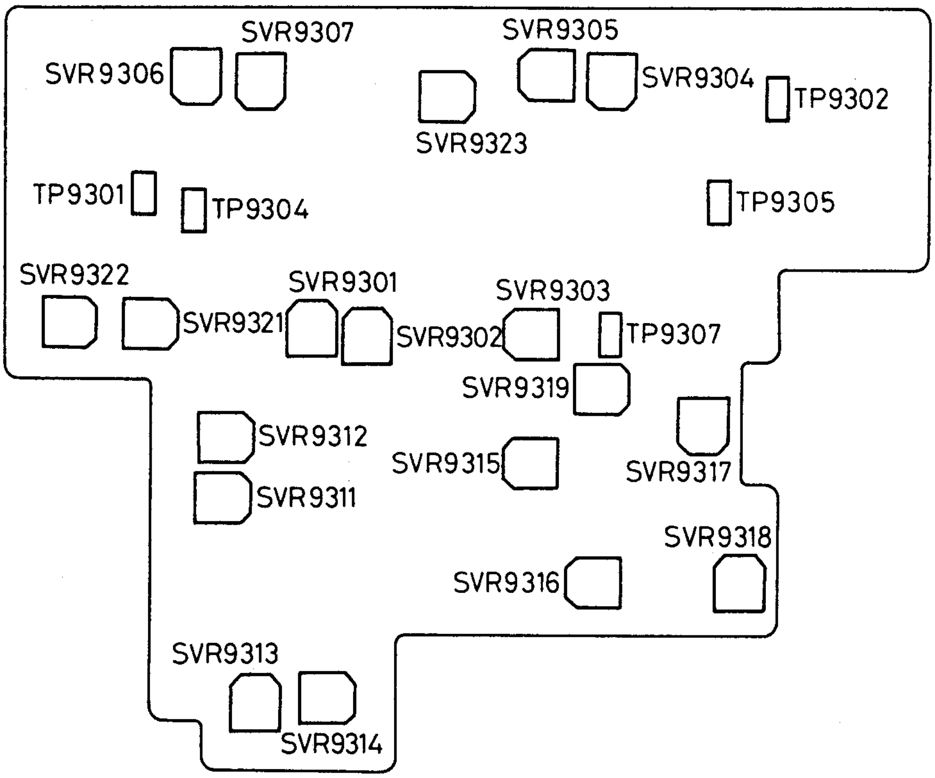
CA2 BOARD (B SIDE)


SVR9204
SVR9202
SVR9203
SVR9205
SVR9201
TP 9204

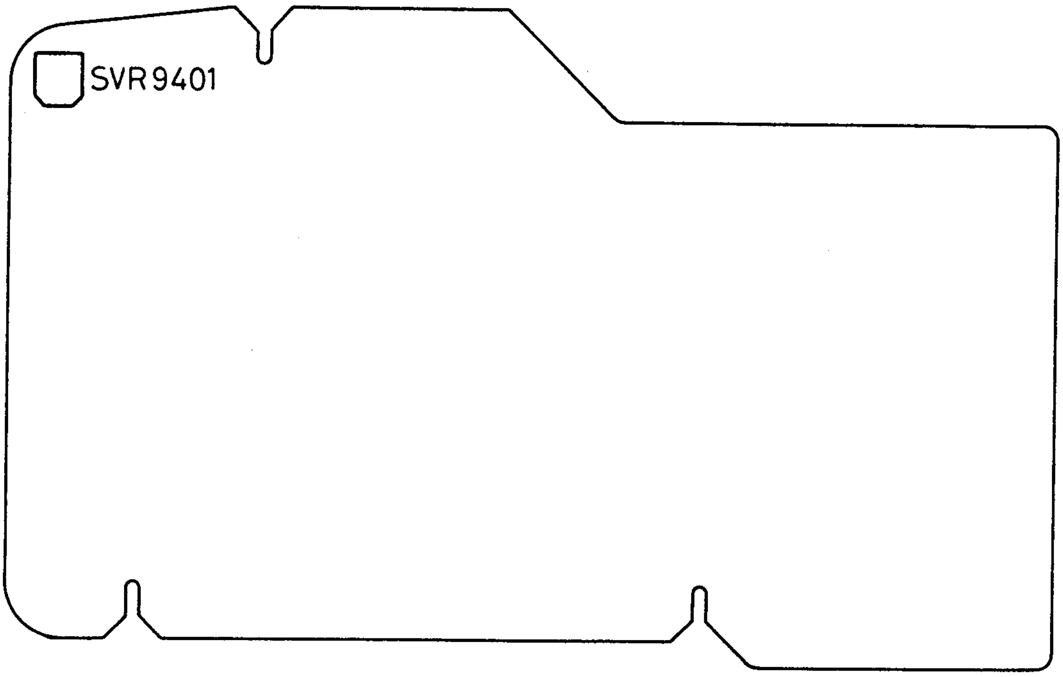
CA3 BOARD (A SIDE)



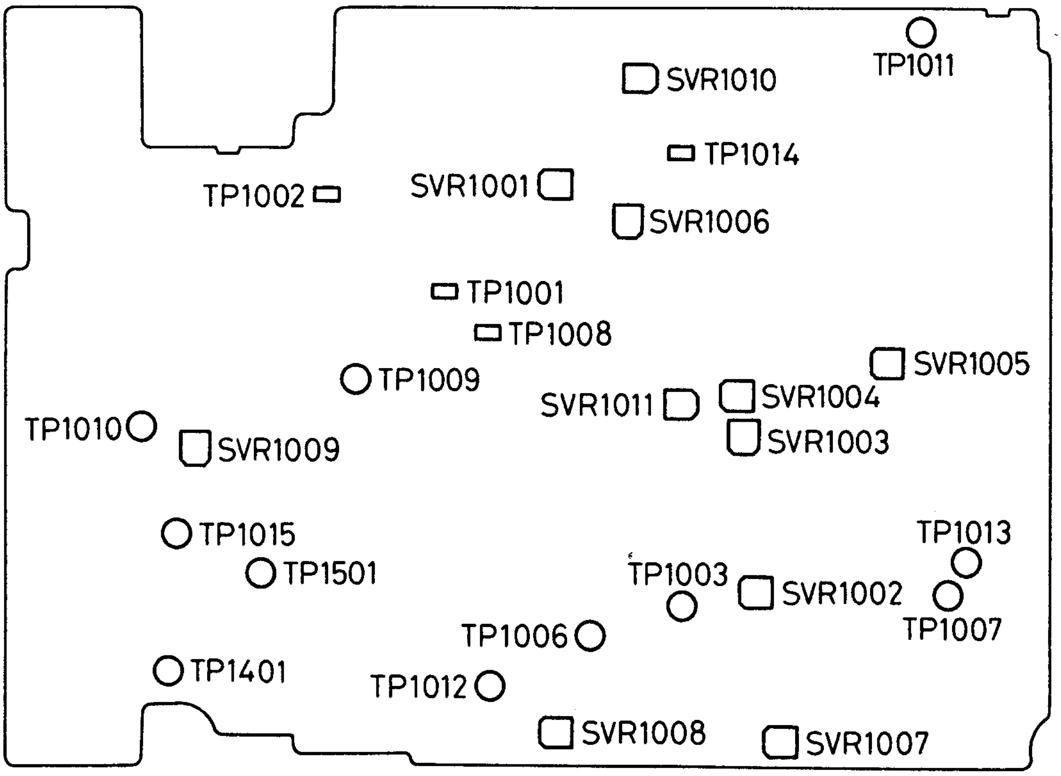
CA3 BOARD (B SIDE)


SVR9307
SVR9305
SVR9306
SVR9304
TP9302
SVR9323
TP9301
TP9304
TP9305
SVR9322
SVR9301
SVR9303
SVR9321
SVR9302
TP9307
SVR9319
SVR9312
SVR9315
SVR9317
SVR9311
SVR9318
SVR9316
SVR9313
SVR9314

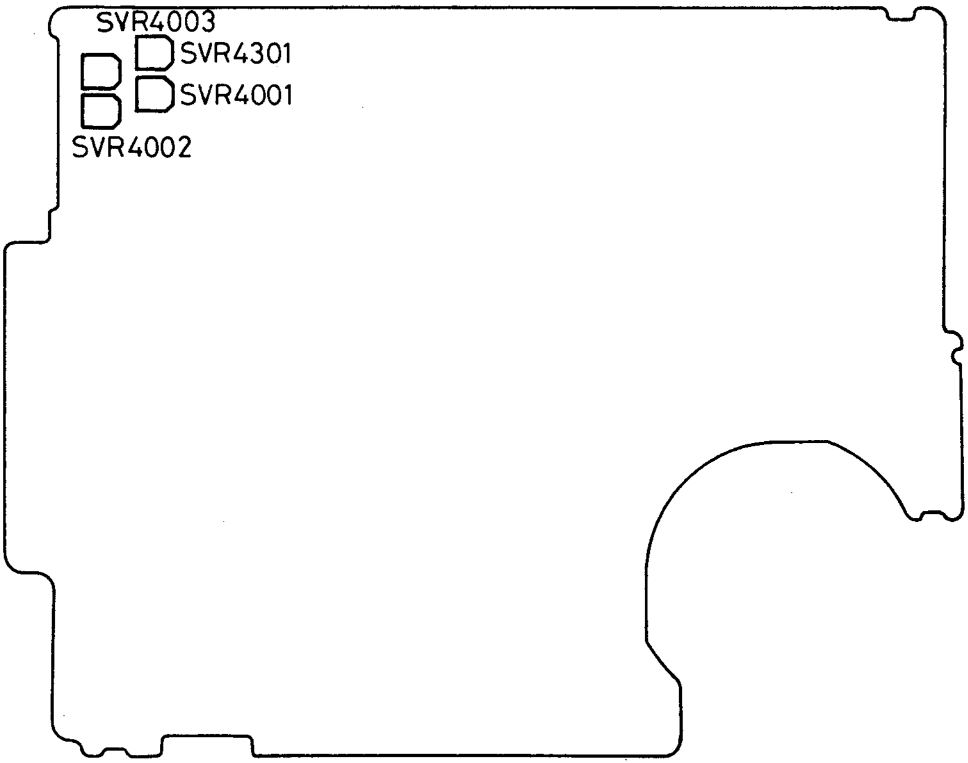
CA4 BOARD (A SIDE)



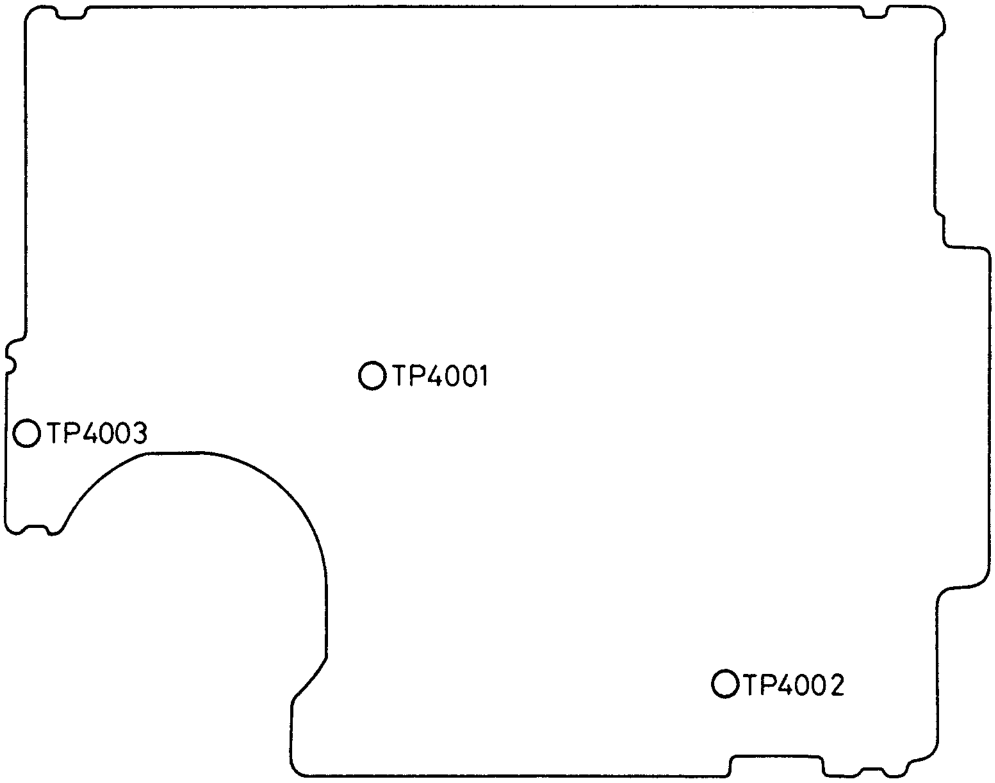
VD1 BOARD (A SIDE)


TP1011
SVR1010
TP1014
TP1002
SVR1001
SVR1006
TP1001
TP1008
SVR1005
TP1009
SVR1011
SVR1004
TP1010
SVR1009
SVR1003
TP1015
TP1013
TP1501
TP1003
SVR1002
TP1007
TP1006
TP1401
TP1012
SVR1008
SVR1007

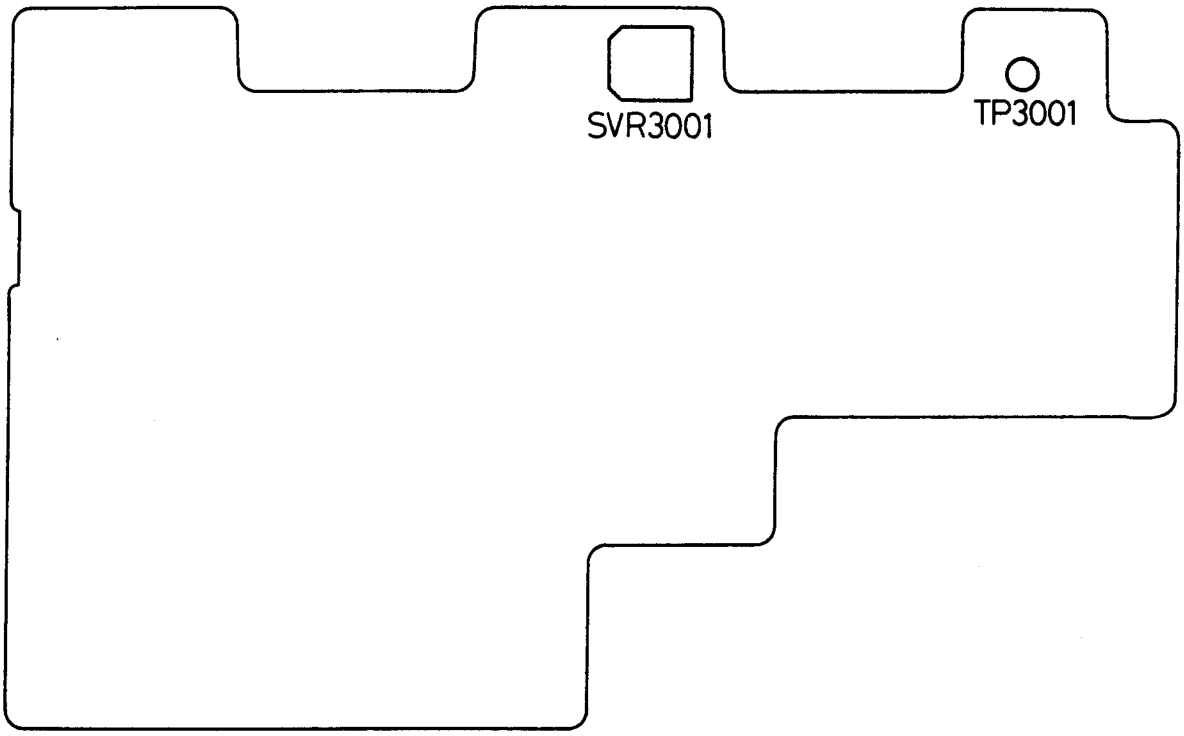
SV1 BOARD (A SIDE)


SVR4003
SVR4301
SVR4001
SVR4002

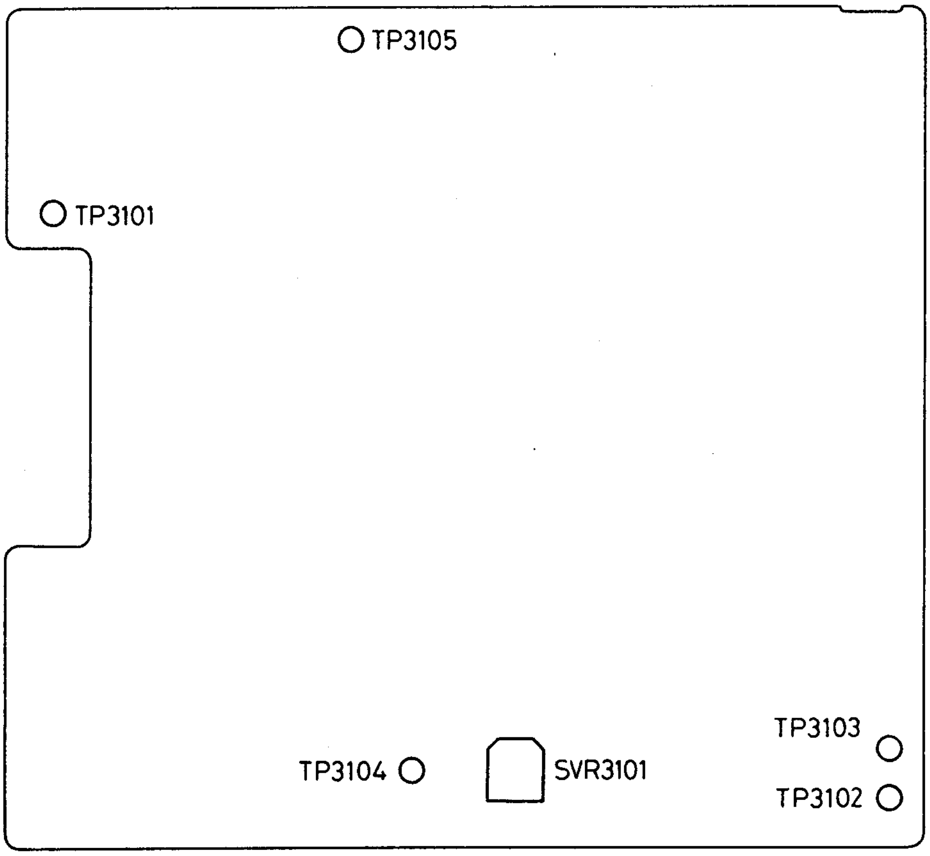
SV1 BOARD (B SIDE)


TP4001
TP4003
TP4002

SY1 BOARD (A SIDE)


SVR3001
TP3001

SY2 BOARD (A SIDE)


TP3105
TP3101
TP3103
TP3104
SVR3101
TP3102

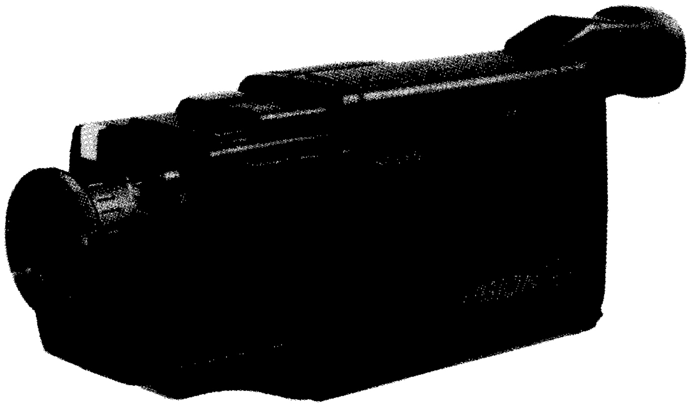
SANYO

Parts List

8mm Camcorder

VM-D3P

BJ35



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A11700
ER7P/G, E, A, ME, SP, SW

REFERENCE No. WM-550003
Printed in Japan

PRODUCT SAFETY NOTICE

The components designated by a symbol (⚠) in this schematic diagram designates components whose value are of special significance to product safety. Should any component designated by a symbol need to be replaced, use only the part designated in the Parts List. Do not deviate from the resistance, wattage and voltage ratings shown.

NOTE : Parts order must contain Model Number, Part Number and Description.

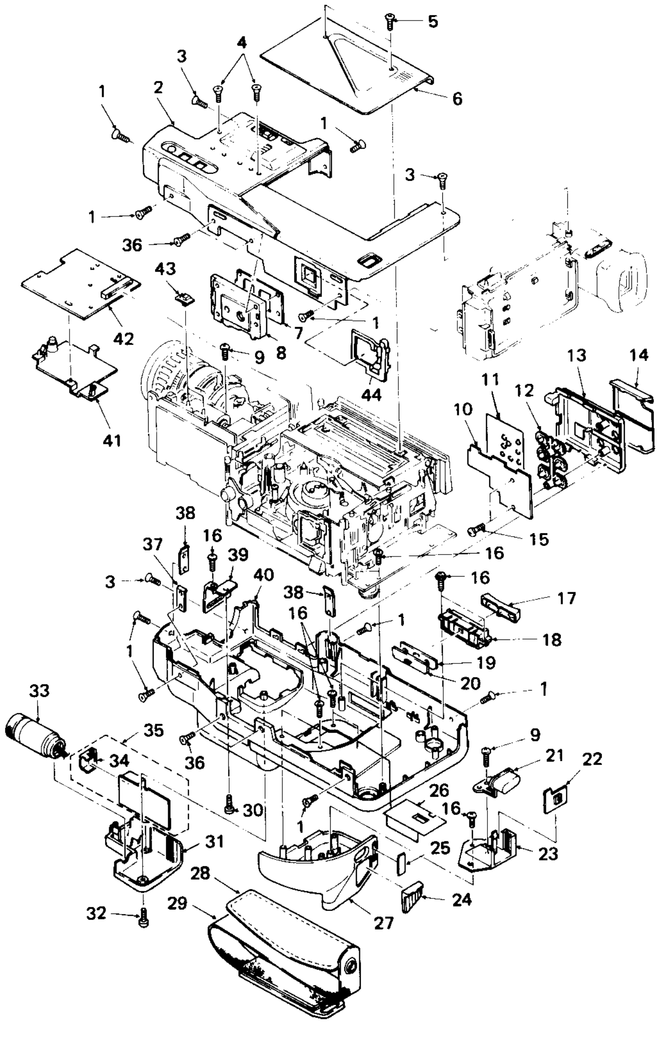
ACCESSORIES

Ref. No.	Part No.	Description
	636 020 4676	ASSY, SOFT CASE PACKING
	636 019 0436	ADAPTER, AC (GERMANY,SPAIN)
	636 019 8791	ADAPTER, AC (UK)
	636 020 5390	ADAPTER, AC (M-EAST)
	126-3-2009	NP55
	636 021 1919	BAND ASSY
	636 019 7312	RF MODULATOR ASSY
	636 002 7732	CORD, DC OUTPUT
	636 002 7534	CORD, COAXIAL
	636 020 4966	INSTRUCTION MANUAL (GERMANY)
	636 020 4973	INSTRUCTION MANUAL, ACC (GERMANY)

Ref. No.	Part No.	Description
	636 020 4980	INSTRUCTION MANUAL (UK)
	636 020 4997	INSTRUCTION MANUAL, ACC (UK)
	636 020 5000	INSTRUCTION MANUAL (SPAIN)
	636 020 5017	INSTRUCTION MANUAL, ACC (SPAIN)
	636 021 1667	INSTRUCTION MANUAL (M-EAST)
	636 021 1674	INSTRUCTION MANUAL, ACC (M-EAST)

CABINET

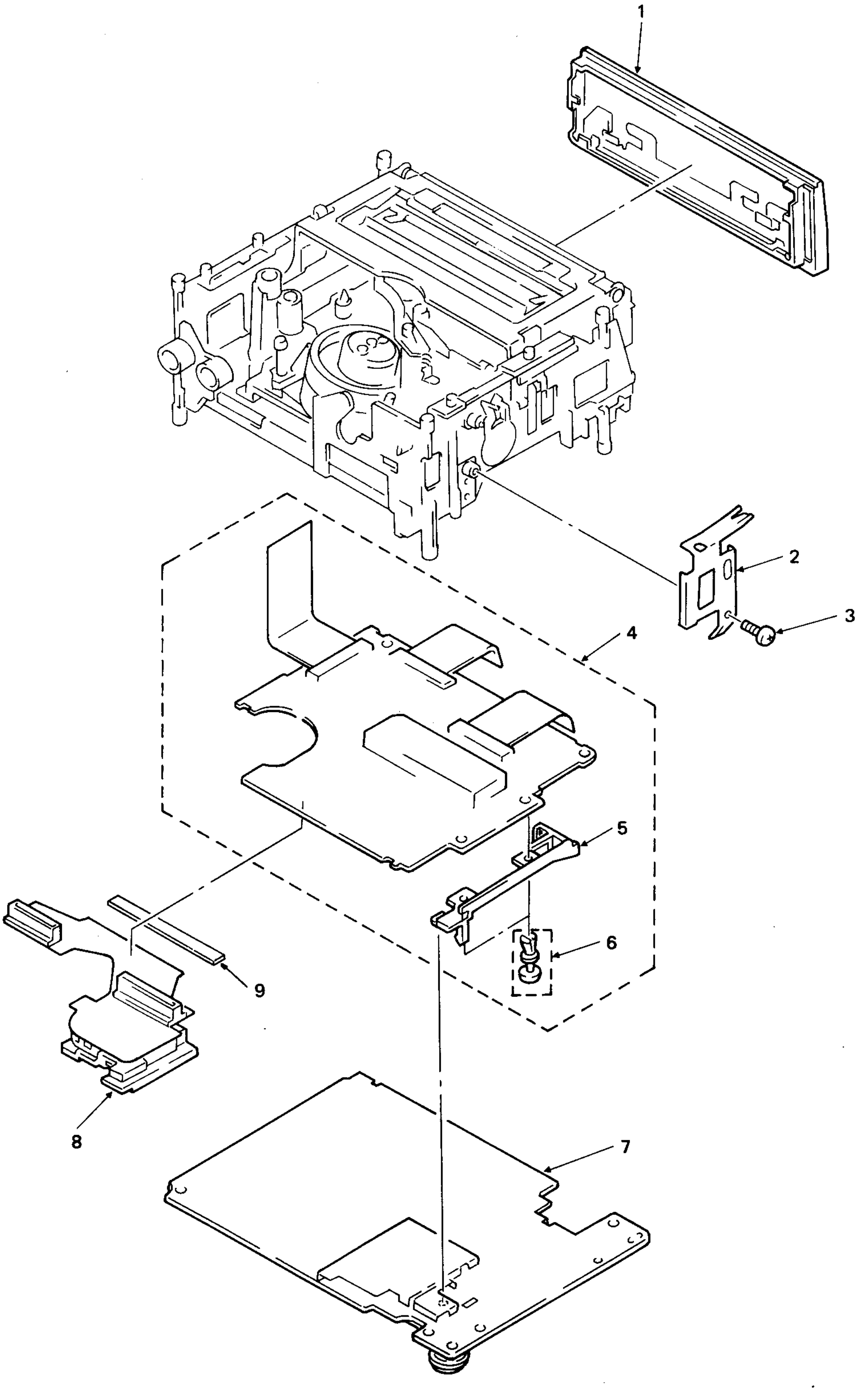
Ref. No.	Part No.	Description
1	412 022 5701	SCR FLT 2X4
2	636 020 0517	CABINET ASSY (L)
2	636 022 5831	CABINET ASSY(L), DIXON
3	411 109 4309	SCR S-TPG FLT 2X6
4	411 109 4408	SCR S-TPG FLT 2X12
5	411 030 2504	SCR TPG PAN PCS 1.7X4
6	636 018 5739	SIDE LID ASSY
6	636 022 5688	SIDE LID ASSY, DIXON
7	636 020 9237	BRACKET
8	636 018 5760	BRACKET ASSY
9	411 025 4506	SCR S-TPG BIN 2X8
10	636 012 9344	SY1 ASSY
11	636 022 6494	INSULATOR
12	636 013 5086	PUSH BUTTONS
12	636 002 5770	PUSH BUTTONS, DIXON
13	636 020 8759	DECK PANEL ASSY
13	636 022 5855	DECK PANEL ASSY, DIXON
14	636 019 1921	SLIDE
14	636 022 5817	SLIDE, DIXON
15	411 021 0809	SCR S-TPG BIN 2X6
16	411 025 4209	SCR S-TPG BIN 2X6
17	636 013 5130	PUSH BUTTON
17	636 019 2799	PUSH BUTTON, DIXON
18	636 014 0554	BRACKET SWITCH
19	636 014 1216	RUBBER CONTACT
20	636 012 9115	TC2 ASSY
21	636 013 5123	PUSH BUTTON, REC S/S
22	636 012 0375	TB1 ASSY
23	636 013 6083	BRACKET BAND
24	636 013 4829	INLAY
24	636 022 5763	INLAY, DIXON
25	636 013 4751	MARKING PLATE
26	636 022 3776	INSULATOR
27	636 013 4393	COVER, GRIP
27	636 018 8280	COVER, GRIP, DIXON
28	636 013 2597	PAD ASSY
28	636 021 6754	PAD ASSY, DIXON
29	636 019 2867	BELT
29	636 023 4123	BELT, DIXON
30	412 022 5602	SCR BIN 2X5
31	636 013 4386	COVER, MIC
31	636 022 5756	COVER, MIC, DIXON
32	411 025 4308	SCR S-TPG BIN 2X6
33	636 012 7166	MIC ASSY
34	636 013 4072	SIGN WINDOW
35	636 019 3574	TC3 ASSY
36	411 002 1801	SCR FLT 2X8
37	636 014 0905	PLATE NUT (A)
38	636 014 0912	PLATE NUT (B)
39	636 013 6076	BRACKET BAND
40	636 020 8285	CABINET (R)
40	636 022 5695	CABINET(R), DIXON
41	636 014 0745	BRACKET P C BOARD
42	636 012 9351	SY2 ASSY
43	636 013 5574	SLIDE KNOB
43	636 022 5800	SLIDE KNOB, DIXON
44	636 013 6632	BRACKET, LITHIUM BATTERY



PCB

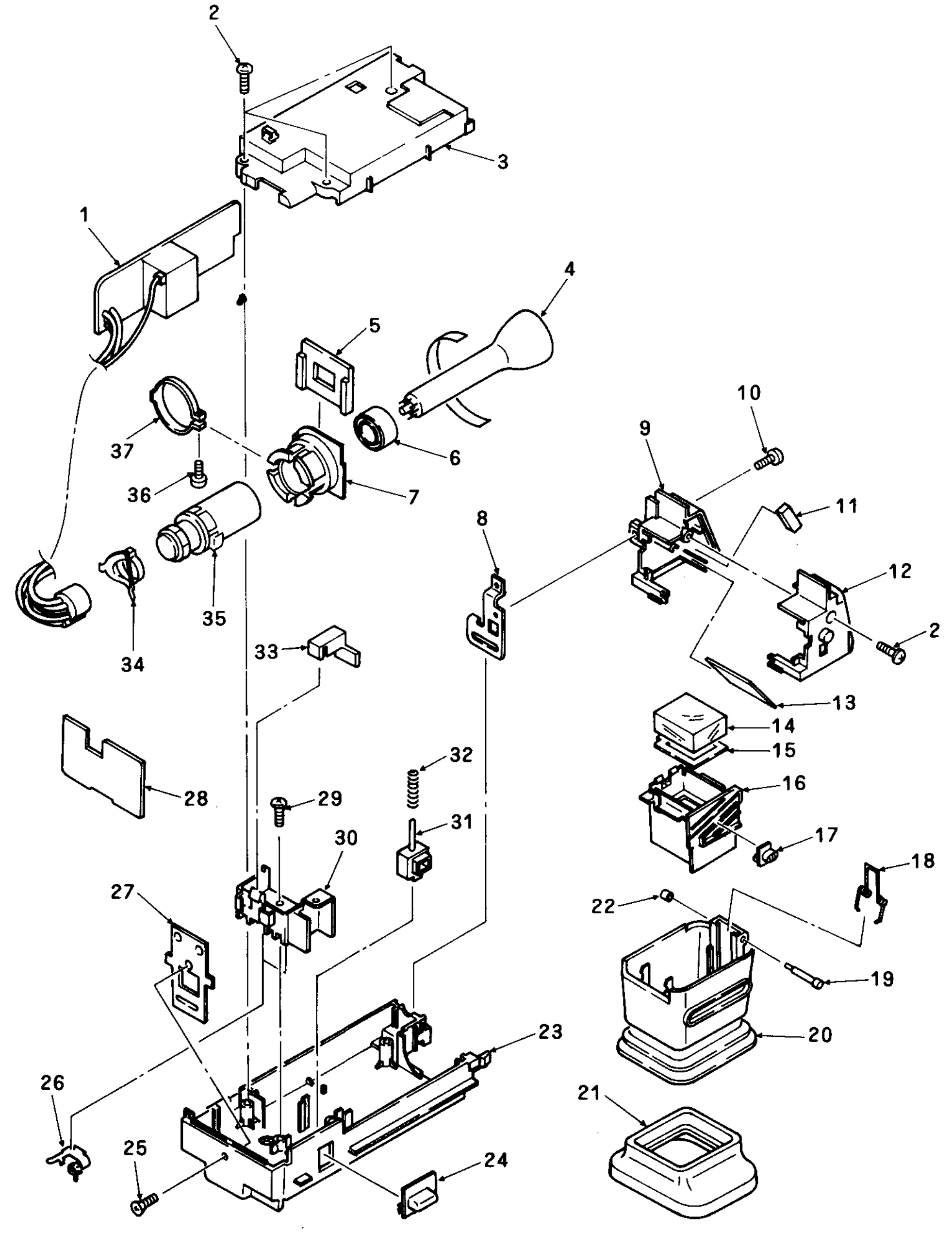
Ref. No.	Part No.	Description
1	636 018 6231	TOP LID ASSY
1	636 022 5862	TOP LID ASSY, DIXON
2	636 013 8988	EARTH PLATE
3	411 025 4209	SCR S-TPG BIN 2X6
4	636 012 9269	SV1 ASSY
5	636 014 0745	BRACKET P C BOARD
6	636 014 2107	FIXER
7	636 021 2862	VD1 ASSY

Ref. No.	Part No.	Description
8	636 012 7654	F.P C BOARD ASSY
9	636 012 9276	TB3 ASSY



VIEWFINDER

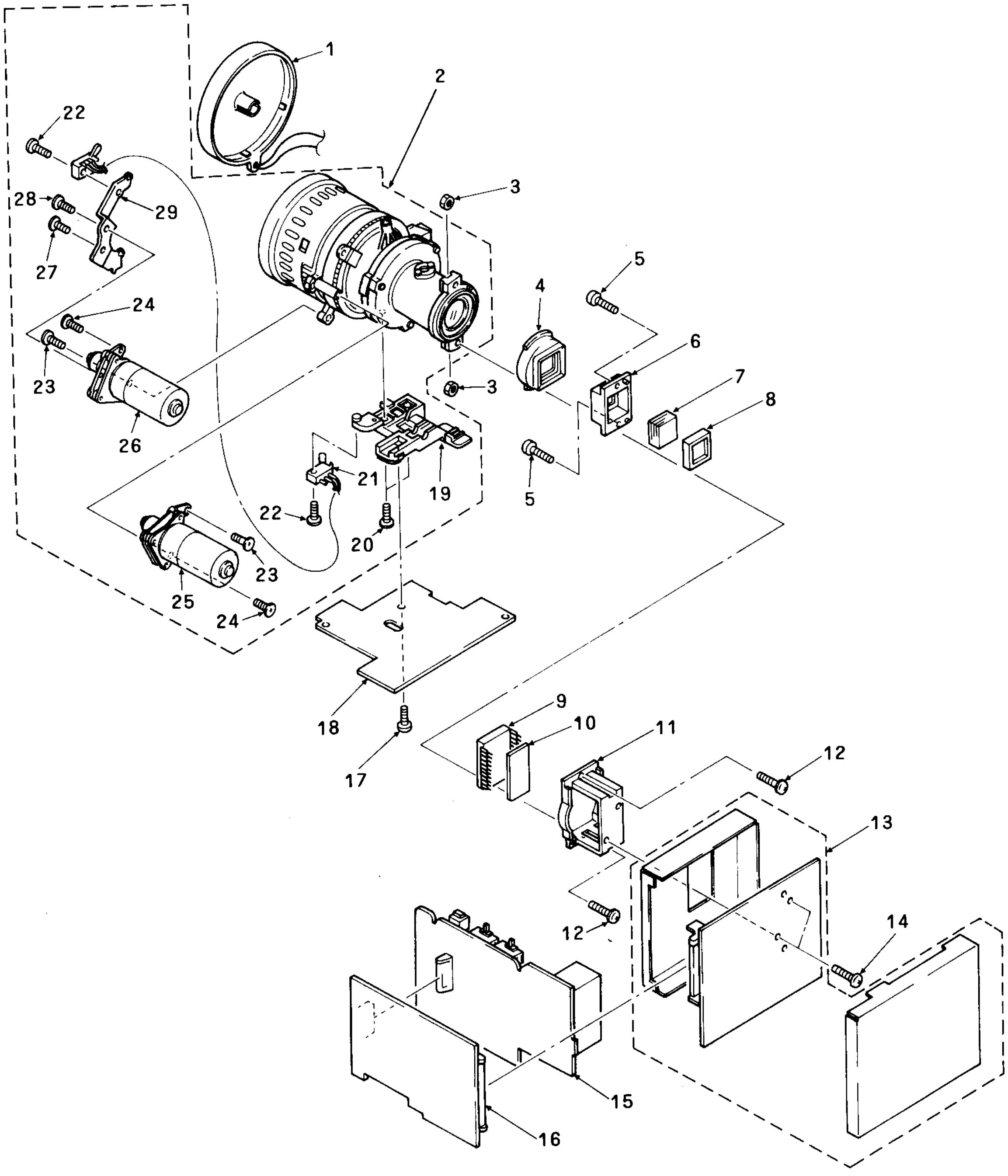
Ref. No.	Part No.	Description
1	636 019 3581	VF1 ASSY
2	411 025 4506	SCR S-TPG BIN 2X8
3	636 013 4362	COVER
4	413 006 6806	PICTURE TUBE
5	636 013 8063	PLATE
6	636 014 3760	RING
7	636 013 6601	BRACKET
8	636 013 6052	BRACKET BAND
9	636 014 6686	BRACKET MIRROR (R)
10	412 022 5602	SCR BIN 2X5
11	636 014 0431	SPACER
12	636 014 6693	BRACKET MIRROR (L)
13	636 014 6679	MIRROR
14	636 012 7760	LENS ASSY
15	636 013 7431	SHEET
16	636 013 3198	FRAME
17	636 013 5536	SLIDE KNOB
18	636 019 2171	SPRING
19	636 014 5566	SHAFT
20	636 014 3470	SLEEVE
21	636 013 7707	HOOD
22	636 014 3784	RING
23	636 013 3068	CABINET
24	636 013 5529	SLIDE KNOB, BATTERY EJECT
25	412 022 5701	SCR FLT 2X4
26	636 013 0975	TERMINAL BATTERY ASSY
27	636 013 6069	BRACKET BAND
28	636 012 9368	PW1 ASSY
29	411 025 3806	SCR S-TPG BIN 2X4
30	636 013 6618	BRACKET
31	636 013 7516	LOCK
32	636 014 6365	SPRING COIL
33	636 014 2251	FIXER, PW1
34	636 014 2169	FIXER, DY
35	636 021 3425	DEFLECTION YOKE
36	411 025 8603	SCR S-TPG PAN 2X10
37	636 014 2244	FIXER, BRACKET



CAMERA

Ref. No.	Part No.	Description
1	636 020 9336	COVER, LENS
2	636 000 0964	LENS
3	411 054 4508	NUT HEX 2
4	636 013 4287	COVER
5	411 039 3304	SCR PAN 2X7
6	636 013 6229	CASE
7	636 013 6786	OPTICAL FILTER
or	636 013 6915	OPTICAL FILTER
8	636 014 0356	SPACER
9	636 000 0728	IMAGE SENSOR
10	636 013 9329	INSULATOR
11	636 021 1476	BRACKET MTG
12	411 104 5707	SCR PAN PCS 2X8
13	636 019 3536	CA1 ASSY
14	411 039 0105	SCP PAN 2X3
15	636 019 3567	CA4 ASSY
16	636 019 3543	CA2 ASSY

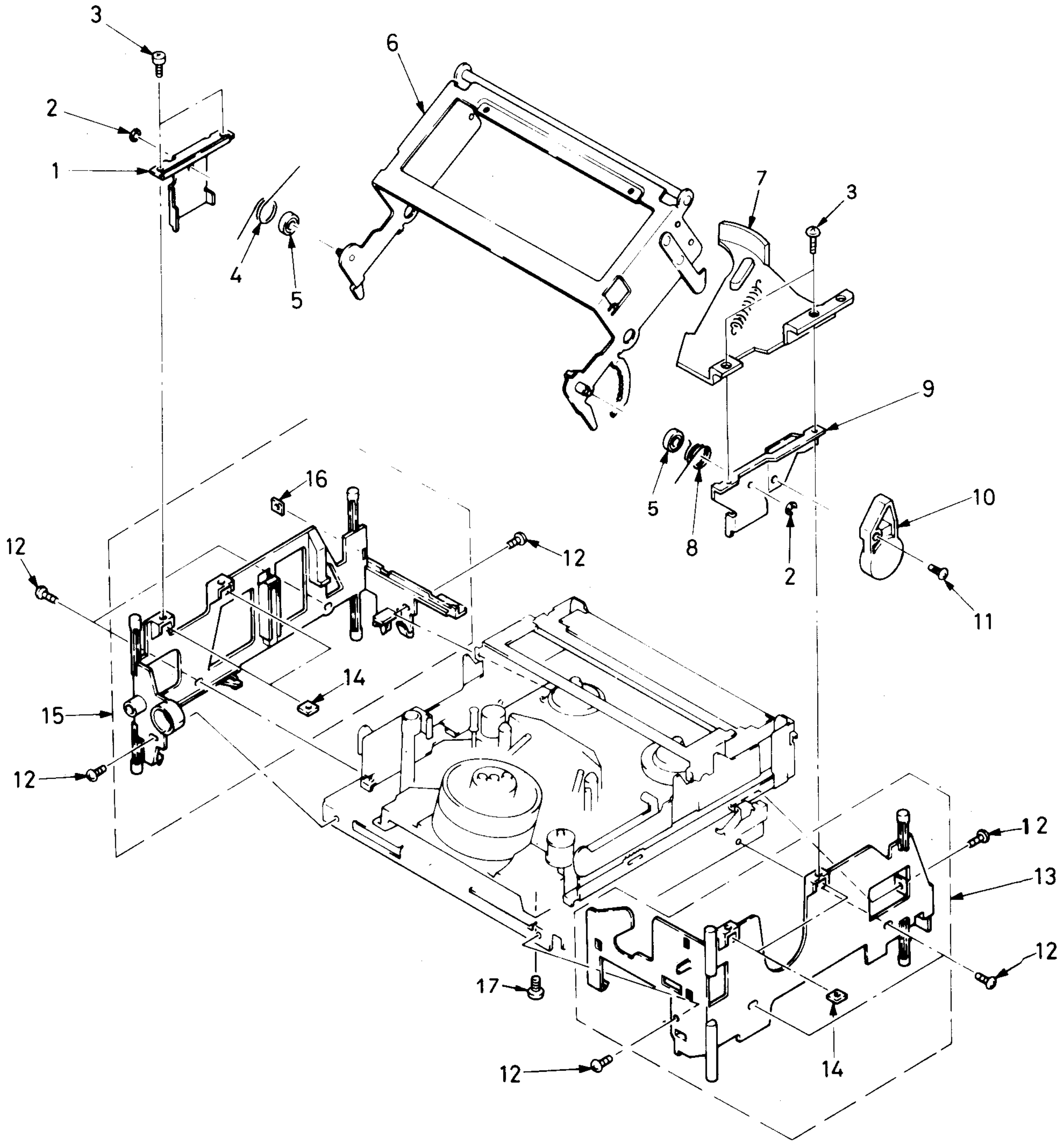
Ref. No.	Part No.	Description
17	411 109 4705	SCR S-TPG PAN 2X4
18	636 019 3550	CA3 ASSY
19	636 014 0547	BRACKET SWITCH
20	412 027 7700	SPECIAL SCREW
21	636 000 8687	SWITCH ASSY
22	412 022 5503	SPECIAL SCREW
23	412 027 7502	SPECIAL SCREW
24	412 027 7601	SPECIAL SCREW
25	636 019 3307	MOTOR, ZOOM
26	636 019 3291	MOTOR, FOCUS
27	412 022 5107	SPECIAL SCREW
28	412 022 5206	SPECIAL SCREW
29	636 014 0516	PLATE



CASSETTE MECHANISM PARTS

Ref. No.	Part No.	Description
1	636 021 8383	FRAME T2 (M)
2	636 021 8451	RING E 1.5
3	636 021 8413	SCREW M1.7
4	636 021 8291	SPRING,TORSION
5	636 021 8277	SLEEVE
6	636 021 8222	ARM ASSY (2),CASSETTE
7	636 021 8192	BRACKET ASSY
8	636 021 8284	SPRING,TORSION
9	636 021 8390	FRAME S2 (M)
10	636 021 8376	DAMPER
11	636 021 8406	SCREW

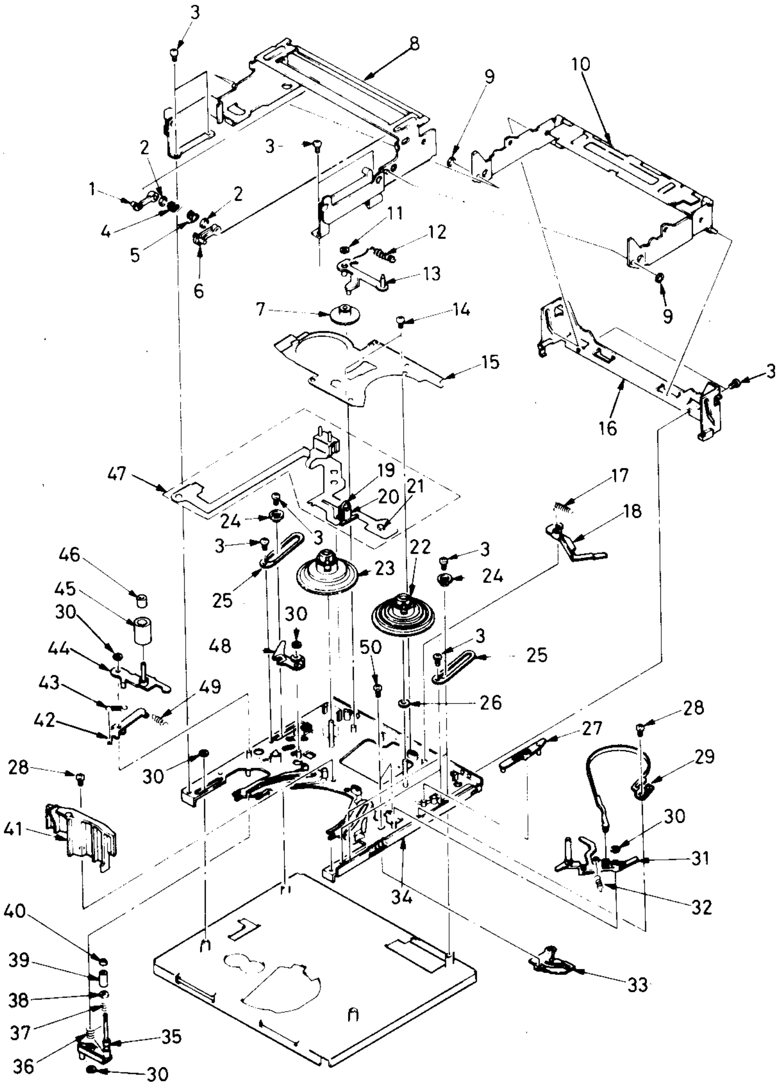
Ref. No.	Part No.	Description
12	636 021 8437	SCREW +P M1.7
13	636 021 8246	FRAME,ASSY,REAR
14	636 021 8352	SPECIAL NUT
15	636 021 8239	FRAME,ASSY,FRONT
16	636 021 8369	SPECIAL NUT
17	411 109 7508	SCREW 1.7X3



CHASSIS, REEL PARTS

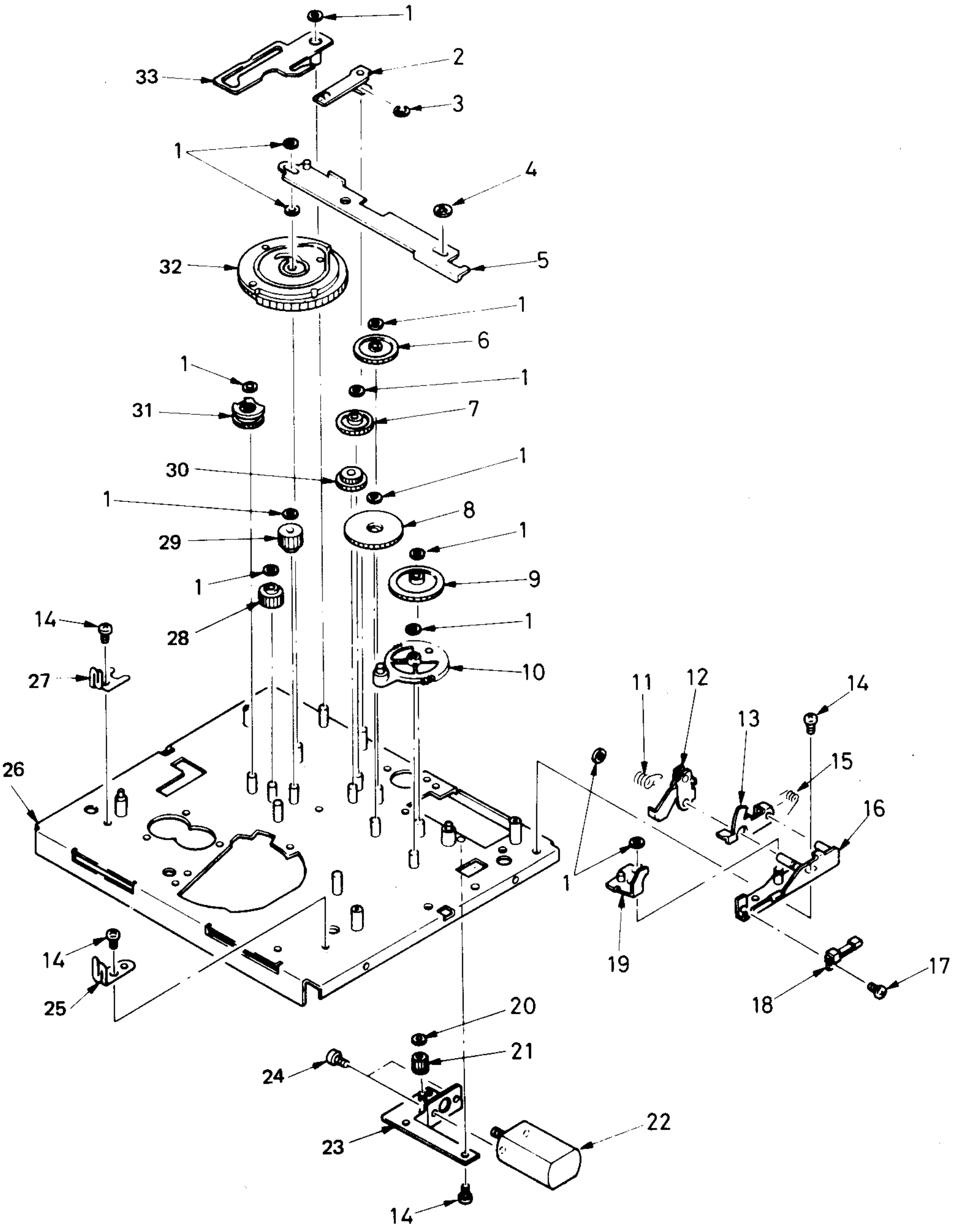
Ref. No.	Part No.	Description
1	636 021 8314	RETAINER (T),CASSETTE
2	636 021 8444	RING E 1.2
3	636 021 9359	SCREW +P 1.4X2.2
4	636 021 8338	SPRING,TORSION
5	636 021 8321	SPRING,TORSION
6	636 021 8307	RETAINER (S),CASSETTE
7	636 021 8215	GEAR ASSY,TS
8	636 021 9502	COMPARTMENT ASSY,CASSETTE
9	636 021 8260	WASHER (1.5),STOPPER
10	636 021 8208	ARM ASSY,BLIND
11	636 021 8253	WASHER,STOPPER
12	636 021 8345	SPRING,TENSION
13	636 021 8802	LEVER (A) ASSY (2)
14	636 021 9199	SCREW (M1.3X5.5),TAPPING
15	636 021 9304	PLATE (2),STOPPER
16	636 021 9069	ARM,LS
17	636 021 8888	SPRING,TENSION
18	636 021 9229	BRAKE (2),SOFT
19	636 021 9410	GL452S
20	636 021 9311	LED HOLDER
21	636 021 9403	TLP907-0
22	636 021 8819	TABLE ASSY(2),REEL,SUPPLY
23	636 021 8611	TABLE ASSY,REEL,TAKE-UP
24	636 021 9090	GUIDE,LS
25	636 021 9083	SPRING,LEAF,LS
26	636 021 9205	WASHER,6
27	636 022 4308	ARM,TG1 RELEASE

Ref. No.	Part No.	Description
28	636 021 9373	SCREW +P 1.4X2.5,TYPE3
29	636 021 8604	BAND ASSY,TG1
30	636 021 8444	RING E 1.2
31	636 021 8666	ARM ASSY (2),TG1
32	636 021 9014	SPRING,TENSION
33	636 021 9151	PLATE,CAM,LS
34	636 022 4292	CHASSIS ASSY (2),LS
35	636 021 8727	ARM ASSY (2),TG7
36	636 021 8932	SPRING
37	636 021 9243	SPRING,COMPRESSION
38	636 021 9267	FLANGE,LOWER,TG7
39	636 021 9274	SLEEVE (2),TG7
40	636 021 9250	FLANGE,UPPER,TG7
41	636 021 9038	BASE,PROTECT
42	636 021 8550	PINCH LEVER ASSY
43	636 021 9021	SPRING,TENSION
44	636 021 8772	ARM (C) ASSY (2),PINCH
45	636 021 8567	PINCH ROLLER ASSY
46	636 021 8970	SLEEVE (P),PINCH
47	636 021 8529	FP-53 BOARD,COMPLETE
48	636 021 8697	ARM (B) ASSY (2),PINCH
49	636 021 9137	SPRING,TENSION
50	636 021 9397	SCREW +P 1.7X1.8 TYPE3



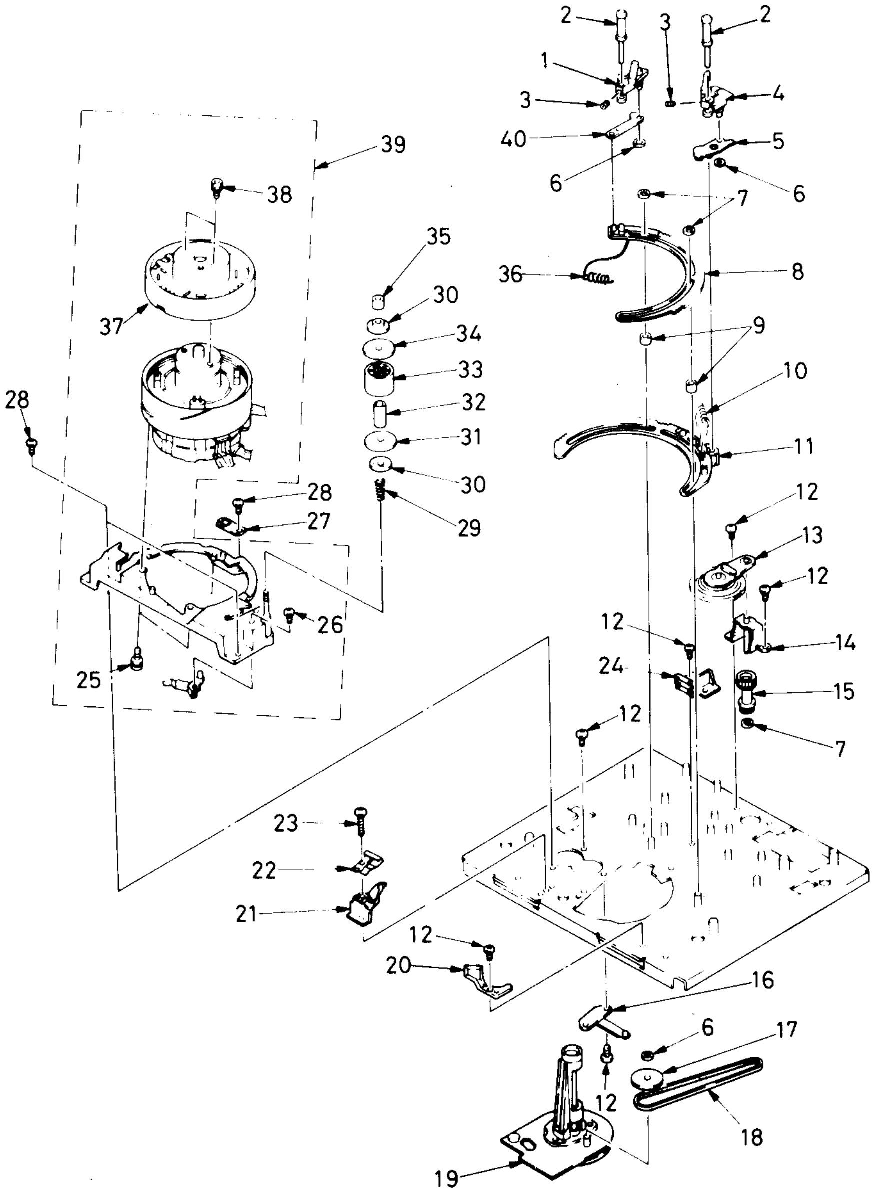
CHASSIS, MAIN PARTS

Ref. No.	Part No.	Description
1	636 021 8871	WASHER,STOPPER
2	636 021 9007	LEVER (B),REEL LOCK
3	636 021 8444	RING E 1.2
4	636 021 8260	WASHER (1.5),STOPPER
5	636 022 4285	SLIDER ASSY M
6	636 021 8956	GEAR (B),THREADING
7	636 021 9144	GEAR (D),THREADING
8	636 021 9120	GEAR (A),LS
9	636 021 8963	GEAR (B),LS
10	636 021 8574	GEAR (C) ASSY,LS
11	636 021 9328	SPRING (A) (2)
12	636 021 8581	ARM ASSY,LOCK
13	636 021 8987	ARM,RETURN PREVENTION
14	636 021 9366	SCREW +P 1.7X2.5
15	636 021 8994	SPRING (B),TORSION
16	636 021 8659	BASE ASSY (2),LOCK
17	636 021 9373	SCREW +P 1.4X2.5,TYPE3
18	636 021 8857	SWITCH,LEAF
19	636 021 8628	ARM ASSY,EJECT
20	636 021 8253	WASHER,STOPPER
21	636 021 9212	WHEEL,WORM
22	636 021 8840	MOTOR,DC (LOADING)
23	636 021 8642	HOLDER ASSY,MOTOR
24	636 021 9359	SCREW +P 1.4X2.2
25	636 021 9106	SPRING (S)
26	636 021 8796	CHASSIS ASSY (2),MECHA
27	636 021 9113	SPRING (T)
28	636 021 8918	GEAR (S),THREADING
29	636 021 8925	GEAR (T),THREADING
30	636 021 9281	GEAR (C) (2),THREADING
31	636 021 9236	GEAR (M) (2),THREADING
32	636 021 8765	CAM ASSY (2)
33	636 021 8703	ARM (A) ASSY (2),PINCH



CHASSIS, BASE PARTS

Ref. No.	Part No.	Description
1	636 021 8758	BASE ASSY (2),TG5
2	636 021 8741	ROLLER ASSY (2),GUIDE
3	636 021 9175	SCREW,GR LOCK
4	636 021 8734	BASE ASSY (2),TG4
5	636 021 8598	JOINT ASSY,S
6	636 021 8253	WASHER,STOPPER
7	636 021 8871	WASHER,STOPPER
8	636 021 8543	SLIDER (T) ASSY,THREADING
9	636 021 8949	ROLLER,GUIDE
10	636 021 9182	SPRING,TENSION
11	636 022 0782	SLIDER (S) ASSY,THREADING
12	636 021 9366	SCREW +P 1.7X2.5
13	636 021 8710	ARM ASSY (2),GEAR
14	636 021 8673	BASE ASSY (2)
15	636 021 8680	PULLEY ASSY (2),MIDWAY
16	636 021 8833	TERMINAL,SHAFT GROUND
17	636 021 8536	GEAR ASSY,CHANGE
18	636 022 0799	BELT,RELAY
19	636 021 9427	MOTOR,DC BHF-3301B
20	636 021 9045	STOPPER,SLIDER,S
21	636 021 9052	STOPPER,SLIDER,T
22	636 021 9076	SPRING (T),LEAF
23	636 021 8901	SCREW,FITTING,LEAF (T)
24	636 021 9298	SUPPORT (2),SLIDER
25	636 021 8895	SCREW
26	636 021 9373	SCREW +P 1.4X2.5,TYPE3
27	636 021 8864	SENSOR,DEW CONDENSATION
28	636 021 9380	SCREW +P 1.7X4,TYPE3
29	636 021 9557	SPRING,COMPRESSION
30	636 021 9571	RETAINER,FLANGE,UPPER
31	636 021 9595	FLANGE,LOWER,TG2
32	636 021 9540	SLEEVE,TG2
33	636 021 9601	ROLLER (2),TG2
34	636 021 9526	FLANGE,TG2
35	636 021 9533	NUT, TG2
36	636 021 9588	SPRING,TENSION
37	636 023 0729	ASSY,CYLINDER,UPPER
38	636 021 9519	SCREW (2X5),BOLT WASHER
39	636 023 0699	CYLINDER ASSY
40	636 021 9564	JOINT,T



ELECTRICAL PARTS

NOTE:

* Materials of Capacitors are abbreviated as follows;

ALUMINUM	Aluminum Electrolytic Capacitor
BC CON	Barrier Layer Ceramic Capacitor
CERAMIC	Ceramic Capacitor
EDL	Electric Double Layer Capacitor
ELECT	Electrolytic Capacitor
MYLAR	Mylar Film Capacitor
NON POLARIZED	Non Polarized Electrolytic Capacitor
POLYPRO	Polypropylene Capacitor

* Tolerance of Capacitor, Resistors and Other parts are noted with follow symboles;

A	+75−10%	M	±20%
F	±1%	N	±30%
G	±2%	P	+100−0%
J	±5%	Z	+80−20%
K	±10%		

VD-1 CIRCUIT BOARD

Location	Part No.	Description
CN8501	636 001 9232	SOCKET, 8P
	636 013 8636	SHIELD PLATE, SIDE A (B)
	636 013 8643	SHIELD PLATE, SIDE B (B)
	636 013 8674	SHIELD PLATE, SIDE A (S)
		(COMPOSITE)
B1001	⚠ 636 000 0131	DC/DC CONVERTER
or	⚠ 636 000 0155	DC/DC CONVERTER
		(CAPACITORS)
C1001	403 114 5600	TA-SOLID 3.3U M 6.3V
C1002	403 090 2006	TA-SOLID 6.8U M 6.3V
C1004	403 067 9304	CERAMIC 0.01U K 25V
C1005	403 149 7303	CERAMIC 0.47U Z 16V
C1006	403 067 9304	CERAMIC 0.01U K 25V
C1007	403 090 7308	TA-SOLID 4.7U M 10V
C1008	403 038 6707	ELECT 220U M 6.3V
C1009	403 067 9304	CERAMIC 0.01U K 25V
C1010	403 119 6909	ELECT 22U M 6.3V
C1011	403 114 5402	TA-SOLID 2.2U M 10V
C1012	403 134 7400	CERAMIC 1U Z 16V
C1013	403 119 6909	ELECT 22U M 6.3V
C1014	403 067 9304	CERAMIC 0.01U K 25V
C1016	403 119 6909	ELECT 22U M 6.3V
C1017	403 067 9304	CERAMIC 0.01U K 25V
C1018	403 149 7303	CERAMIC 0.47U Z 16V
C1019	403 134 7400	CERAMIC 1U Z 16V
C1020	403 114 5600	TA-SOLID 3.3U M 6.3V
C1021	403 149 7303	CERAMIC 0.47U Z 16V
C1022	403 134 7400	CERAMIC 1U Z 16V
C1023	403 134 7400	CERAMIC 1U Z 16V
C1024	403 134 7400	CERAMIC 1U Z 16V
C1025	403 134 7400	CERAMIC 1U Z 16V
C1026	403 119 6909	ELECT 22U M 6.3V
C1027	403 067 9304	CERAMIC 0.01U K 25V
C1028	403 114 5600	TA-SOLID 3.3U M 6.3V
C1029	403 134 7400	CERAMIC 1U Z 16V
C1030	403 067 9304	CERAMIC 0.01U K 25V
C1031	403 067 9304	CERAMIC 0.01U K 25V
C1032	403 119 6909	ELECT 22U M 6.3V
C1033	403 134 7400	CERAMIC 1U Z 16V
C1034	403 067 9304	CERAMIC 0.01U K 25V
C1035	403 067 9304	CERAMIC 0.01U K 25V
C1036	403 119 6909	ELECT 22U M 6.3V
C1037	403 068 0409	CERAMIC 0.1U Z 25V
C1038	403 105 9105	ELECT 10U M 16V
C1039	403 134 7400	CERAMIC 1U Z 16V
C1040	403 134 7400	CERAMIC 1U Z 16V
C1041	403 067 9304	CERAMIC 0.01U K 25V
C1042	403 114 5600	TA-SOLID 3.3U M 6.3V
C1043	403 067 9304	CERAMIC 0.01U K 25V
C1044	403 134 7400	CERAMIC 1U Z 16V
C1047	403 067 9304	CERAMIC 0.01U K 25V
C1048	403 067 9304	CERAMIC 0.01U K 25V
C1049	403 067 9304	CERAMIC 0.01U K 25V
C1050	403 026 7501	CERAMIC 470P J 50V
C1051	403 069 1702	CERAMIC 1000P K 50V
C1052	403 028 4102	CERAMIC 56P J 50V
C1053	403 070 8806	CERAMIC 1500P K 50V
C1054	403 018 0503	CERAMIC 22P J 50V
C1056	403 014 3409	CERAMIC 18P J 50V
C1057	403 014 9203	CERAMIC 180P J 50V
C1058	403 032 2309	CERAMIC 75P J 50V
C1059	403 067 9304	CERAMIC 0.01U K 25V
C1060	403 012 6808	CERAMIC 15P J 50V
C1061	403 025 8905	CERAMIC 43P J 50V
C1062	403 067 9304	CERAMIC 0.01U K 25V
C1063	403 071 8102	CERAMIC 2200P K 50V
C1064	403 022 8205	CERAMIC 33P J 50V
C1065	403 020 5503	CERAMIC 270P J 50V
C1066	403 067 9304	CERAMIC 0.01U K 25V
C1067	403 068 5107	CERAMIC 0.047U Z 25V
C1068	403 068 0409	CERAMIC 0.1U Z 25V
C1069	403 008 7406	CERAMIC 10P D 50V
C1070	403 067 9304	CERAMIC 0.01U K 25V
C1071	403 067 9304	CERAMIC 0.01U K 25V
C1072	403 020 0409	CERAMIC 27P J 50V
C1073	403 067 9304	CERAMIC 0.01U K 25V
C1074	403 114 5600	TA-SOLID 3.3U M 6.3V
C1075	403 067 9304	CERAMIC 0.01U K 25V
C1076	403 139 3605	ELECT 100U M 6.3V
C1077	403 067 9304	CERAMIC 0.01U K 25V
C1078	403 073 9107	CERAMIC 4700P K 50V
C1079	403 068 0409	CERAMIC 0.1U Z 25V
C1080	403 033 4500	CERAMIC 82P J 50V
C1081	403 026 2803	CERAMIC 47P J 50V
C1082	403 026 2803	CERAMIC 47P J 50V
C1083	403 009 5708	CERAMIC 100P J 50V
C1084	403 067 9304	CERAMIC 0.01U K 25V
C1085	403 033 4500	CERAMIC 82P J 50V
C1086	403 067 9304	CERAMIC 0.01U K 25V
C1089	403 067 9304	CERAMIC 0.01U K 25V
C1091	403 134 7400	CERAMIC 1U Z 16V
C1093	403 020 5503	CERAMIC 270P J 50V
C1094	403 067 9304	CERAMIC 0.01U K 25V
C1095	403 105 9105	ELECT 10U M 16V
C1096	403 024 7107	CERAMIC 390P J 50V
C1097	403 026 7501	CERAMIC 470P J 50V
C1098	403 119 6909	ELECT 22U M 6.3V
C1099	403 067 9304	CERAMIC 0.01U K 25V
C1100	403 105 9105	ELECT 10U M 16V
C1101	403 134 7400	CERAMIC 1U Z 16V
C1103	403 134 7400	CERAMIC 1U Z 16V
C1105	403 069 1702	CERAMIC 1000P K 50V
C1106	403 067 9304	CERAMIC 0.01U K 25V
C1107	403 105 9105	ELECT 10U M 16V
C1108	403 105 9105	ELECT 10U M 16V
C1109	403 114 5600	TA-SOLID 3.3U M 6.3V
C1110	403 134 7400	CERAMIC 1U Z 16V

Location	Part No.	Description
C1112	403 134 7400	CERAMIC 1U Z 16V
C1114	403 067 9304	CERAMIC 0.01U K 25V
C1115	403 105 9105	ELECT 10U M 16V
C1116	403 067 9304	CERAMIC 0.01U K 25V
C1117	403 119 6909	ELECT 22U M 6.3V
C1118	403 009 5708	CERAMIC 100P J 50V
C1119	403 018 7403	CERAMIC 220P J 50V
C1120	403 134 7400	CERAMIC 1U Z 16V
C1122	403 134 7400	CERAMIC 1U Z 16V
C1123	403 067 9304	CERAMIC 0.01U K 25V
C1124	403 119 6909	ELECT 22U M 6.3V
C1127	403 067 9304	CERAMIC 0.01U K 25V
C1128	403 067 9304	CERAMIC 0.01U K 25V
C1129	403 067 9304	CERAMIC 0.01U K 25V
C1130	403 114 5600	TA-SOLID 3.3U M 6.3V
C1132	403 134 7400	CERAMIC 1U Z 16V
C1133	403 134 7400	CERAMIC 1U Z 16V
C1134	403 032 2309	CERAMIC 75P J 50V
C1135	403 114 5600	TA-SOLID 3.3U M 6.3V
C1137	403 067 9304	CERAMIC 0.01U K 25V
C1138	403 026 2803	CERAMIC 47P J 50V
C1139	403 024 2102	CERAMIC 39P J 50V
C1140	403 033 4500	CERAMIC 82P J 50V
C1141	403 027 1201	CERAMIC 5P C 50V
C1144	403 033 4500	CERAMIC 82P J 50V
C1145	403 071 8102	CERAMIC 2200P K 50V
C1146	403 022 8205	CERAMIC 33P J 50V
C1147	403 067 9304	CERAMIC 0.01U K 25V
C1148	403 067 9304	CERAMIC 0.01U K 25V
C1151	403 026 2803	CERAMIC 47P J 50V
C1152	403 030 6903	CERAMIC 68P J 50V
C1153	403 018 0503	CERAMIC 22P J 50V
C1159	403 068 5107	CERAMIC 0.047U Z 25V
C1161	403 067 9304	CERAMIC 0.01U K 25V
C1162	403 067 9304	CERAMIC 0.01U K 25V
C1163	403 119 6909	ELECT 22U M 6.3V
C1164	403 067 9304	CERAMIC 0.01U K 25V
C1166	403 119 6909	ELECT 22U M 6.3V
C1167	403 014 3409	CERAMIC 18P J 50V
C1301	403 090 7308	TA-SOLID 4.7U M 10V
C1302	403 067 9304	CERAMIC 0.01U K 25V
C1303	403 011 4904	CERAMIC 120P J 50V
C1304	403 089 6206	TA-SOLID 4.7U M 4V
C1305	403 105 9105	ELECT 10U M 16V
C1306	403 067 9304	CERAMIC 0.01U K 25V
C1307	403 069 1702	CERAMIC 1000P K 50V
C1309	403 024 7107	CERAMIC 390P J 50V
C1310	403 020 0409	CERAMIC 27P J 50V
C1311	403 067 9304	CERAMIC 0.01U K 25V
C1314	403 033 9000	CERAMIC 820P J 50V
C1315	403 020 0409	CERAMIC 27P J 50V
C1316	403 020 0409	CERAMIC 27P J 50V
C1317	403 009 5708	CERAMIC 100P J 50V
C1318	403 018 0503	CERAMIC 22P J 50V
C1319	403 069 1702	CERAMIC 1000P K 50V
C1320	403 023 4404	CERAMIC 330P J 50V
C1321	403 009 5708	CERAMIC 100P J 50V
C1401	403 067 9304	CERAMIC 0.01U K 25V
C1402	403 011 4904	CERAMIC 120P J 50V
C1403	403 028 4102	CERAMIC 56P J 50V
C1404	403 067 9304	CERAMIC 0.01U K 25V
C1405	403 067 9304	CERAMIC 0.01U K 25V
C1501	403 067 9304	CERAMIC 0.01U K 25V
C1502	403 068 0409	CERAMIC 0.1U Z 25V
C1503	403 090 7308	TA-SOLID 4.7U M 10V
C1504	403 067 9304	CERAMIC 0.01U K 25V
C1505	403 068 0409	CERAMIC 0.1U Z 25V
C1506	403 067 9304	CERAMIC 0.01U K 25V
C1507	403 090 7308	TA-SOLID 4.7U M 10V
C1508	403 068 0409	CERAMIC 0.1U Z 25V
C1509	403 090 7308	TA-SOLID 4.7U M 10V
C1510	403 068 0409	CERAMIC 0.1U Z 25V

Location	Part No.	Description
C1511	403 068 5107	CERAMIC 0.047U Z 25V
C1512	403 067 9304	CERAMIC 0.01U K 25V
C1513	403 067 9304	CERAMIC 0.01U K 25V
C1514	403 018 7403	CERAMIC 220P J 50V
C1517	403 068 0409	CERAMIC 0.1U Z 25V
C1519	403 067 9304	CERAMIC 0.01U K 25V
C1520	403 068 0409	CERAMIC 0.1U Z 25V
C1521	403 068 0409	CERAMIC 0.1U Z 25V
C1522	403 114 5600	TA-SOLID 3.3U M 6.3V
C1523	403 114 5600	TA-SOLID 3.3U M 6.3V
C1524	403 068 0409	CERAMIC 0.1U Z 25V
C1525	403 068 0409	CERAMIC 0.1U Z 25V
C1526	403 067 9304	CERAMIC 0.01U K 25V
C1527	403 068 0409	CERAMIC 0.1U Z 25V
C1528	403 068 0409	CERAMIC 0.1U Z 25V
C1529	403 067 9304	CERAMIC 0.01U K 25V
C1530	403 068 0409	CERAMIC 0.1U Z 25V
C1531	403 090 7308	TA-SOLID 4.7U M 10V
C1532	403 090 7308	TA-SOLID 4.7U M 10V
C1801	403 026 7501	CERAMIC 470P J 50V
C1802	403 067 9304	CERAMIC 0.01U K 25V
C2002	403 114 4207	ELECT 47U M 4V
C2003	403 067 9304	CERAMIC 0.01U K 25V
C2004	403 114 5600	TA-SOLID 3.3U M 6.3V
C2008	403 091 0407	TA-SOLID 1U M 16V
C2009	403 114 4108	ELECT 33U M 4V
C2010	403 067 9809	CERAMIC 0.1U K 25V
C2011	403 139 3605	ELECT 100U M 6.3V
C2012	403 114 4207	ELECT 47U M 4V
C2014	403 091 0407	TA-SOLID 1U M 16V
C2015	403 067 9809	CERAMIC 0.1U K 25V
		(DIODES)
D1001	407 004 1000	DIODE DCC010
D1002	407 004 0706	DIODE DCB015
D1004	407 004 8009	DIODE DSB015
D1005	407 004 8009	DIODE DSB015
D1007	407 004 8009	DIODE DSB015
D1302	407 004 8009	DIODE DSB015
D1801	407 057 8902	ZENER DIODE RD8.2M
D1802	407 057 8902	ZENER DIODE RD8.2M
D1803	407 057 8902	ZENER DIODE RD8.2M
D1804	407 057 8902	ZENER DIODE RD8.2M
D1805	407 057 8902	ZENER DIODE RD8.2M
D1806	407 057 8902	ZENER DIODE RD8.2M
D1807	407 054 5508	ZENER DIODE RD13M
D2005	407 004 1000	DIODE DCC010
D2006	407 004 0201	DIODE DCA015
		(INTEGRATED CIRCUITS)
IC1001	409 143 7608	IC CXA1201Q
IC1002	409 143 8100	IC CXL1502M-T1
IC1003	409 161 4801	IC CXA1200AQ
IC1004	409 051 2900	IC TC4053BF(TP1)
IC1301	409 143 7905	IC CXA1203M-T1
IC1501	409 143 7806	IC CXA1202Q-Z
IC2001	409 132 7602	IC JU0336
		(COILS)
L1001	636 019 8579	COIL,INDUCTOR 100UK
L1002	636 019 8579	COIL,INDUCTOR 100UK
L1003	636 019 8579	COIL,INDUCTOR 100UK
L1004	636 019 8579	COIL,INDUCTOR 100UK
L1005	636 019 8579	COIL,INDUCTOR 100UK
L1006	636 019 8579	COIL,INDUCTOR 100UK
L1007	636 019 8579	COIL,INDUCTOR 100UK
L1010	636 019 8579	COIL,INDUCTOR 100UK
L1011	636 003 3184	HF CHOKE 330UH
L1012	636 003 2231	HF CHOKE 120UH
L1013	636 003 2392	HF CHOKE 8.2UH
L1014	636 003 3207	HF CHOKE 470UH
L1015	636 003 3184	HF CHOKE 330UH
L1016	636 003 2255	HF CHOKE 180UH

Location	Part No.	Description
L1017	636 003 2200	HF CHOKE 68UH
L1019	636 019 8579	COIL,INDUCTOR 100UK
L1020	636 003 2224	HF CHOKE 100UH
L1021	636 003 2248	HF CHOKE 150UH
L1022	636 003 3184	HF CHOKE 330UH
L1024	636 019 8579	COIL,INDUCTOR 100UK
L1025	636 019 8579	COIL,INDUCTOR 100UK
L1026	636 019 8579	COIL,INDUCTOR 100UK
L1027	636 003 2361	HF CHOKE 4.7UH
L1028	636 003 2361	HF CHOKE 4.7UH
L1029	636 003 2101	HF CHOKE 10UH
L1031	636 019 8746	COIL,INDUCTOR 47UK
L1032	636 019 8579	COIL,INDUCTOR 100UK
L1033	636 019 8579	COIL,INDUCTOR 100UK
L1034	636 003 2460	HF CHOKE 33UH
L1035	636 003 3207	HF CHOKE 470UH
L1036	636 003 3184	HF CHOKE 330UH
L1038	636 003 2514	HF CHOKE 82UH
L1039	636 003 2484	HF CHOKE 47UH
L1041	636 003 5379	CORE
L1042	636 003 5379	CORE
L1043	636 019 8579	COIL,INDUCTOR 100UK
L1301	636 019 8579	COIL,INDUCTOR 100UK
L1302	636 003 2491	HF CHOKE 56UH
L1303	636 003 2491	HF CHOKE 56UH
L1304	636 003 2415	HF CHOKE 12UH
L1401	636 019 8661	COIL,INDUCTOR 220UK
L1402	636 003 2392	HF CHOKE 8.2UH
L1501	636 019 8555	COIL,INDUCTOR 10UK
L1502	636 019 8555	COIL,INDUCTOR 10UK
L1503	636 019 8555	COIL,INDUCTOR 10UK
L1504	636 019 8555	COIL,INDUCTOR 10UK
		(TRANSISTORS)
Q1002	405 018 1900	TR 2SC3395
Q1003	405 008 7509	TR 2SB815-B6
Q1008	405 015 8407	TR 2SC2812-L5
Q1009	405 015 8407	TR 2SC2812-L5
Q1010	405 015 8407	TR 2SC2812-L5
Q1011	405 015 8407	TR 2SC2812-L5
Q1018	405 015 8407	TR 2SC2812-L5
Q1019	405 015 8407	TR 2SC2812-L5
Q1020	405 015 8407	TR 2SC2812-L5
Q1021	405 002 6706	TR 2SA1179-M6
Q1022	405 002 6706	TR 2SA1179-M6
Q1023	405 015 8407	TR 2SC2812-L5
Q1024	405 002 6706	TR 2SA1179-M6
Q1025	405 015 8407	TR 2SC2812-L5
Q1026	405 015 8407	TR 2SC2812-L5
Q1027	405 015 8407	TR 2SC2812-L5
Q1028	405 015 8407	TR 2SC2812-L5
Q1029	405 002 6706	TR 2SA1179-M6
Q1030	405 015 8407	TR 2SC2812-L5
Q1031	405 015 8407	TR 2SC2812-L5
Q1032	405 015 8407	TR 2SC2812-L5
Q1033	405 002 6706	TR 2SA1179-M6
Q1034	405 015 8407	TR 2SC2812-L5
Q1035	405 015 8407	TR 2SC2812-L5
Q1036	405 008 7509	TR 2SB815-B6
Q1037	405 018 1900	TR 2SC3395
Q1038	405 002 6706	TR 2SA1179-M6
Q1040	405 002 6706	TR 2SA1179-M6
Q1041	405 018 1900	TR 2SC3395
Q1042	405 003 7108	TR 2SA1341
Q1043	405 015 8407	TR 2SC2812-L5
Q1044	405 018 2204	TR 2SC3397
Q1048	405 003 7108	TR 2SA1341
Q1049	405 015 8407	TR 2SC2812-L5
Q1050	405 015 8407	TR 2SC2812-L5
Q1051	405 015 8407	TR 2SC2812-L5
Q1052	405 003 7108	TR 2SA1341
Q1053	405 060 7509	TR FMG2-T99
Q1054	405 015 8407	TR 2SC2812-L5
Q1055	405 002 6706	TR 2SA1179-M6
Q1061	405 015 8407	TR 2SC2812-L5
Q1062	405 060 7509	TR FMG2-T99
Q1064	405 018 1900	TR 2SC3395
Q1065	405 018 1900	TR 2SC3395
Q1301	405 015 8407	TR 2SC2812-L5
Q1302	405 015 8407	TR 2SC2812-L5
Q1303	405 015 8407	TR 2SC2812-L5
Q1304	405 018 1900	TR 2SC3395
Q1305	405 002 6706	TR 2SA1179-M6
Q1306	405 003 7108	TR 2SA1341
Q1307	405 015 8704	TR 2SC2812-L6
Q1308	405 018 1900	TR 2SC3395
Q1309	405 018 1900	TR 2SC3395
Q1401	405 002 6706	TR 2SA1179-M6
Q1402	405 002 6706	TR 2SA1179-M6
Q1501	405 060 7509	TR FMG2-T99
Q1502	405 018 2204	TR 2SC3397
Q1801	405 060 6908	TR 2SA1202-O
Q1802	405 002 6706	TR 2SA1179-M6
Q1803	405 018 1900	TR 2SC3395
Q2001	405 029 3207	TR DTC114TK-T96
Q2002	405 015 8902	TR 2SC2812-L7
Q2003	405 074 0602	TR IMZ1-109
Q2004	405 015 8902	TR 2SC2812-L7
		(RESISTORS)
R1001	401 037 6704	MT-GLAZE 1.2K J 1/10W
R1002	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1003	401 037 5707	MT-GLAZE 100K J 1/10W
R1006	401 037 5400	MT-GLAZE 1K J 1/10W
R1007	401 039 0908	MT-GLAZE 910 J 1/10W
R1008	401 038 8905	MT-GLAZE 68 J 1/10W
R1009	401 037 5400	MT-GLAZE 1K J 1/10W
R1010	401 038 6505	MT-GLAZE 47K J 1/10W
R1011	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1014	401 037 6704	MT-GLAZE 1.2K J 1/10W
R1015	401 037 5400	MT-GLAZE 1K J 1/10W
R1017	401 039 0304	MT-GLAZE 820 J 1/10W
R1022	401 038 7700	MT-GLAZE 5.6K J 1/10W
R1023	401 039 0403	MT-GLAZE 8.2K J 1/10W
R1024	401 038 7700	MT-GLAZE 5.6K J 1/10W
R1025	401 038 7601	MT-GLAZE 560 J 1/10W
R1026	401 038 2002	MT-GLAZE 270 J 1/10W
R1027	401 038 7106	MT-GLAZE 510 J 1/10W
R1028	401 038 5003	MT-GLAZE 390 J 1/10W
R1029	401 037 5806	MT-GLAZE 1M J 1/10W
R1030	401 037 5806	MT-GLAZE 1M J 1/10W
R1031	401 037 5806	MT-GLAZE 1M J 1/10W
R1032	401 037 5202	MT-GLAZE 100 J 1/10W
R1033	401 037 5400	MT-GLAZE 1K J 1/10W
R1034	401 037 5400	MT-GLAZE 1K J 1/10W
R1035	401 038 9209	MT-GLAZE 6.8K J 1/10W
R1036	401 038 5102	MT-GLAZE 3.9K J 1/10W
R1037	401 038 5300	MT-GLAZE 39K J 1/10W
R1038	401 037 6803	MT-GLAZE 12K J 1/10W
R1039	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1049	401 038 3702	MT-GLAZE 33K J 1/10W
R1050	401 037 8005	MT-GLAZE 15K J 1/10W
R1051	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1052	401 038 7601	MT-GLAZE 560 J 1/10W
R1053	401 038 7601	MT-GLAZE 560 J 1/10W
R1054	401 037 9200	MT-GLAZE 1.8K J 1/10W
R1055	401 039 0403	MT-GLAZE 8.2K J 1/10W
R1056	401 038 9209	MT-GLAZE 6.8K J 1/10W
R1057	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1058	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1059	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1060	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1061	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1062	401 038 7601	MT-GLAZE 560 J 1/10W
R1063	401 038 7601	MT-GLAZE 560 J 1/10W

Location	Part No.	Description
R1064	401 038 5102	MT-GLAZE 3.9K J 1/10W
R1065	401 039 0304	MT-GLAZE 820 J 1/10W
R1066	401 038 0800	MT-GLAZE 22K J 1/10W
R1067	401 038 0800	MT-GLAZE 22K J 1/10W
R1068	401 038 0602	MT-GLAZE 220 J 1/10W
R1069	401 038 0602	MT-GLAZE 220 J 1/10W
R1070	401 038 7601	MT-GLAZE 560 J 1/10W
R1071	401 037 5202	MT-GLAZE 100 J 1/10W
R1072	401 037 8005	MT-GLAZE 15K J 1/10W
R1073	401 037 8005	MT-GLAZE 15K J 1/10W
R1074	401 037 5400	MT-GLAZE 1K J 1/10W
R1075	401 037 5400	MT-GLAZE 1K J 1/10W
R1076	401 038 7601	MT-GLAZE 560 J 1/10W
R1077	401 038 3504	MT-GLAZE 330 J 1/10W
R1078	401 038 0701	MT-GLAZE 2.2K J 1/10W
R1079	401 039 0304	MT-GLAZE 820 J 1/10W
R1080	401 037 6803	MT-GLAZE 12K J 1/10W
R1081	401 037 5608	MT-GLAZE 10K J 1/10W
R1082	401 038 6307	MT-GLAZE 470 J 1/10W
R1083	401 038 8905	MT-GLAZE 68 J 1/10W
R1084	401 039 0403	MT-GLAZE 8.2K J 1/10W
R1085	401 037 9200	MT-GLAZE 1.8K J 1/10W
R1086	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1087	401 038 7601	MT-GLAZE 560 J 1/10W
R1088	401 037 9309	MT-GLAZE 18K J 1/10W
R1089	401 037 9309	MT-GLAZE 18K J 1/10W
R1090	401 037 5400	MT-GLAZE 1K J 1/10W
R1091	401 038 5003	MT-GLAZE 390 J 1/10W
R1092	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1093	401 038 9001	MT-GLAZE 680 J 1/10W
R1094	401 038 2101	MT-GLAZE 2.7K J 1/10W
R1095	401 038 0602	MT-GLAZE 220 J 1/10W
R1096	401 038 0701	MT-GLAZE 2.2K J 1/10W
R1097	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1098	401 038 6307	MT-GLAZE 470 J 1/10W
R1100	401 037 5400	MT-GLAZE 1K J 1/10W
R1101	401 038 6307	MT-GLAZE 470 J 1/10W
R1102	401 038 8509	MT-GLAZE 620 J 1/10W
R1103	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1104	401 038 0701	MT-GLAZE 2.2K J 1/10W
R1105	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1106	401 038 0701	MT-GLAZE 2.2K J 1/10W
R1107	401 037 5400	MT-GLAZE 1K J 1/10W
R1108	401 038 6307	MT-GLAZE 470 J 1/10W
R1109	401 039 1004	MT-GLAZE 9.1K J 1/10W
R1110	401 038 0800	MT-GLAZE 22K J 1/10W
R1111	401 037 8005	MT-GLAZE 15K J 1/10W
R1112	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1113	401 038 7809	MT-GLAZE 56K J 1/10W
R1115	401 037 7008	MT-GLAZE 1.2M J 1/10W
R1116	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1117	401 037 5400	MT-GLAZE 1K J 1/10W
R1118	401 037 5400	MT-GLAZE 1K J 1/10W
R1120	401 038 5003	MT-GLAZE 390 J 1/10W
R1121	401 037 5608	MT-GLAZE 10K J 1/10W
R1122	401 037 5608	MT-GLAZE 10K J 1/10W
R1123	401 037 5608	MT-GLAZE 10K J 1/10W
R1124	401 037 9200	MT-GLAZE 1.8K J 1/10W
R1125	401 039 0403	MT-GLAZE 8.2K J 1/10W
R1126	401 038 9001	MT-GLAZE 680 J 1/10W
R1127	401 039 0304	MT-GLAZE 820 J 1/10W
R1128	401 038 0701	MT-GLAZE 2.2K J 1/10W
R1131	401 038 6505	MT-GLAZE 47K J 1/10W
R1132	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1133	401 037 5608	MT-GLAZE 10K J 1/10W
R1134	401 037 5608	MT-GLAZE 10K J 1/10W
R1180	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1182	401 037 5806	MT-GLAZE 1M J 1/10W
R1183	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1185	401 037 5608	MT-GLAZE 10K J 1/10W
R1186	401 037 9200	MT-GLAZE 1.8K J 1/10W
R1187	401 038 2200	MT-GLAZE 27K J 1/10W
R1188	401 038 0800	MT-GLAZE 22K J 1/10W
R1189	401 038 0800	MT-GLAZE 22K J 1/10W
R1190	401 038 2200	MT-GLAZE 27K J 1/10W
R1191	401 038 0800	MT-GLAZE 22K J 1/10W
R1192	401 038 3504	MT-GLAZE 330 J 1/10W
R1193	401 037 5202	MT-GLAZE 100 J 1/10W
R1194	401 037 6704	MT-GLAZE 1.2K J 1/10W
R1197	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1198	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1199	401 037 9309	MT-GLAZE 18K J 1/10W
R1200	401 037 6803	MT-GLAZE 12K J 1/10W
R1201	401 037 8005	MT-GLAZE 15K J 1/10W
R1202	401 037 5608	MT-GLAZE 10K J 1/10W
R1209	401 037 8005	MT-GLAZE 15K J 1/10W
R1210	401 038 7601	MT-GLAZE 560 J 1/10W
R1211	401 038 3504	MT-GLAZE 330 J 1/10W
R1212	401 038 0701	MT-GLAZE 2.2K J 1/10W
R1213	401 038 9001	MT-GLAZE 680 J 1/10W
R1214	401 037 5400	MT-GLAZE 1K J 1/10W
R1215	401 037 5400	MT-GLAZE 1K J 1/10W
R1216	401 038 2101	MT-GLAZE 2.7K J 1/10W
R1217	401 037 5707	MT-GLAZE 100K J 1/10W
R1218	401 037 8005	MT-GLAZE 15K J 1/10W
R1219	401 038 7809	MT-GLAZE 56K J 1/10W
R1220	401 038 0800	MT-GLAZE 22K J 1/10W
R1227	401 038 9001	MT-GLAZE 680 J 1/10W
R1228	401 038 9001	MT-GLAZE 680 J 1/10W
R1229	401 037 6704	MT-GLAZE 1.2K J 1/10W
R1230	401 038 0701	MT-GLAZE 2.2K J 1/10W
R1240	401 037 5608	MT-GLAZE 10K J 1/10W
R1241	401 037 5608	MT-GLAZE 10K J 1/10W
R1242	401 037 5608	MT-GLAZE 10K J 1/10W
R1243	401 038 7601	MT-GLAZE 560 J 1/10W
R1246	401 038 0602	MT-GLAZE 220 J 1/10W
R1247	401 038 0800	MT-GLAZE 22K J 1/10W
R1248	401 038 3702	MT-GLAZE 33K J 1/10W
R1249	401 037 9309	MT-GLAZE 18K J 1/10W
R1250	401 038 0800	MT-GLAZE 22K J 1/10W
R1251	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1252	401 037 8104	MT-GLAZE 150K J 1/10W
R1302	401 039 0403	MT-GLAZE 8.2K J 1/10W
R1303	401 037 5707	MT-GLAZE 100K J 1/10W
R1304	401 037 5400	MT-GLAZE 1K J 1/10W
R1305	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1306	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1307	401 038 2200	MT-GLAZE 27K J 1/10W
R1308	401 038 6505	MT-GLAZE 47K J 1/10W
R1310	401 038 6505	MT-GLAZE 47K J 1/10W
R1313	401 038 7700	MT-GLAZE 5.6K J 1/10W
R1314	401 038 6505	MT-GLAZE 47K J 1/10W
R1315	401 038 6505	MT-GLAZE 47K J 1/10W
R1316	401 037 5608	MT-GLAZE 10K J 1/10W
R1317	401 038 6505	MT-GLAZE 47K J 1/10W
R1318	401 037 6803	MT-GLAZE 12K J 1/10W
R1319	401 037 5608	MT-GLAZE 10K J 1/10W
R1320	401 039 0403	MT-GLAZE 8.2K J 1/10W
R1321	401 038 6505	MT-GLAZE 47K J 1/10W
R1322	401 037 5400	MT-GLAZE 1K J 1/10W
R1323	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1324	401 038 3603	MT-GLAZE 3.3K J 1/10W
R1325	401 037 5400	MT-GLAZE 1K J 1/10W
R1326	401 038 2101	MT-GLAZE 2.7K J 1/10W
R1327	401 037 6704	MT-GLAZE 1.2K J 1/10W
R1328	401 038 0800	MT-GLAZE 22K J 1/10W
R1329	401 038 6307	MT-GLAZE 470 J 1/10W
R1330	401 037 5400	MT-GLAZE 1K J 1/10W
R1331	401 037 5707	MT-GLAZE 100K J 1/10W
R1333	401 038 6505	MT-GLAZE 47K J 1/10W
R1335	401 038 3702	MT-GLAZE 33K J 1/10W
R1336	401 037 5608	MT-GLAZE 10K J 1/10W
R1401	401 038 2200	MT-GLAZE 27K J 1/10W
R1402	401 038 0800	MT-GLAZE 22K J 1/10W
R1403	401 038 6307	MT-GLAZE 470 J 1/10W

Location	Part No.	Description
R1404	401 038 3504	MT-GLAZE 330 J 1/10W
R1405	401 038 5508	MT-GLAZE 4.7 J 1/10W
R1406	401 038 7700	MT-GLAZE 5.6K J 1/10W
R1501	401 038 7908	MT-GLAZE 560K J 1/10W
R1502	401 037 8104	MT-GLAZE 150K J 1/10W
R1503	401 037 5707	MT-GLAZE 100K J 1/10W
R1504	401 038 0800	MT-GLAZE 22K J 1/10W
R1505	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1506	401 038 6505	MT-GLAZE 47K J 1/10W
R1507	401 038 2200	MT-GLAZE 27K J 1/10W
R1508	401 038 5300	MT-GLAZE 39K J 1/10W
R1509	401 038 6505	MT-GLAZE 47K J 1/10W
R1510	401 037 7909	MT-GLAZE 1.5K J 1/10W
R1511	401 038 0800	MT-GLAZE 22K J 1/10W
R1512	401 038 0800	MT-GLAZE 22K J 1/10W
R1513	401 038 2200	MT-GLAZE 27K J 1/10W
R1514	401 037 5608	MT-GLAZE 10K J 1/10W
R1515	401 038 0800	MT-GLAZE 22K J 1/10W
R1516	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1517	401 038 3702	MT-GLAZE 33K J 1/10W
R1518	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1519	401 038 3702	MT-GLAZE 33K J 1/10W
R1801	401 037 5608	MT-GLAZE 10K J 1/10W
R1802	401 038 6406	MT-GLAZE 4.7K J 1/10W
R1803	401 037 5608	MT-GLAZE 10K J 1/10W
R1806	401 037 5400	MT-GLAZE 1K J 1/10W
R2004	401 037 5400	MT-GLAZE 1K J 1/10W
R2005	401 037 5400	MT-GLAZE 1K J 1/10W
R2006	401 037 5608	MT-GLAZE 10K J 1/10W
R2007	401 037 5400	MT-GLAZE 1K J 1/10W
R2009	401 038 3702	MT-GLAZE 33K J 1/10W
R2011	401 039 0403	MT-GLAZE 8.2K J 1/10W
R2012	401 038 5102	MT-GLAZE 3.9K J 1/10W
R2014	401 038 6307	MT-GLAZE 470 J 1/10W
R2015	401 039 0304	MT-GLAZE 820 J 1/10W
R2018	401 038 9209	MT-GLAZE 6.8K J 1/10W
R2019	401 037 5608	MT-GLAZE 10K J 1/10W
		(SEMI VARIABLE RESISTORS)
SVR1001	636 000 2999	SEMI VR, 47K OHM
SVR1002	636 000 2951	SEMI VR, 10K OHM
SVR1003	636 000 2913	SEMI VR, 2.2K OHM
SVR1004	636 000 2913	SEMI VR, 2.2K OHM
SVR1005	636 000 2913	SEMI VR, 2.2K OHM
SVR1006	636 000 2852	SEMI VR, 220 OHM
SVR1007	636 000 2920	SEMI VR, 3.3K OHM
SVR1008	636 000 2876	SEMI VR, 470 OHM
SVR1009	636 000 2913	SEMI VR, 2.2K OHM
SVR1010	636 000 2937	SEMI VR, 4.7K OHM
SVR1011	636 000 2999	SEMI VR, 47K OHM
		(TRANSFORMERS)
T1002	636 019 4953	FILTER
T2001	636 003 6079	FILTER, 1.5MHZ
		(MISCELLANEOUS)
F1801	⚠ 636 000 0353	CIRCUIT PROTECTOR
X1001	636 019 4977	CRYSTAL
X1002	636 019 4946	FILTER

PW-1 CIRCUIT BOARD

Location	Part No.	Description
		(CAPACITORS)
C5001	403 043 0202	ELECT 220U M 16V

Location	Part No.	Description
		(COILS)
L5001	636 003 3924	HF CHOKE
L5002	636 003 3924	HF CHOKE
L5003	636 003 3924	HF CHOKE
		(MISCELLANEOUS)
F5001	⚠ 423 000 0700	FUSE, 3.15A
F5002	⚠ 636 000 0391	CIRCUIT PROTECTOR, 1.0A

SV-1 CIRCUIT BOARD

Location	Part No.	Description
	636 013 8650	SHIELD PLATE, SIDE A
	636 013 8667	SHIELD PLATE, SIDE B
	636 013 9404	INSULATOR, SIDE A
	636 013 9411	INSULATOR, SIDE B
	636 019 8449	HOLDER
		(CAPACITORS)
C4001	403 010 8507	CERAMIC 12P J 50V
C4002	403 010 8507	CERAMIC 12P J 50V
C4003	403 069 5601	CERAMIC 0.01U K 50V
C4004	403 090 7308	TA-SOLID 4.7U M 10V
C4005	403 090 7308	TA-SOLID 4.7U M 10V
C4006	403 134 7400	CERAMIC 1U Z 16V
C4007	403 134 7400	CERAMIC 1U Z 16V
C4008	403 134 7400	CERAMIC 1U Z 16V
C4009	403 068 5107	CERAMIC 0.047U Z 25V
C4010	403 134 7400	CERAMIC 1U Z 16V
C4011	403 105 9105	ELECT 10U M 16V
C4012	403 100 9704	CERAMIC 0.1U M 25V
C4013	403 105 9204	ELECT 47U M 16V
C4014	403 100 9704	CERAMIC 0.1U M 25V
C4015	403 121 6201	ELECT 82U M 10V
C4016	403 121 6201	ELECT 82U M 10V
C4017	403 100 9704	CERAMIC 0.1U M 25V
C4018	403 121 6201	ELECT 82U M 10V
C4019	403 068 2007	CERAMIC 0.022U K 25V
C4020	403 138 9608	TA-SOLID 22U M 6.3V
C4021	403 134 7400	CERAMIC 1U Z 16V
C4022	403 069 5601	CERAMIC 0.01U K 50V
C4023	403 069 5601	CERAMIC 0.01U K 50V
C4024	403 090 7308	TA-SOLID 4.7U M 10V
C4025	403 089 4806	TA-SOLID 10U M 4V
C4026	403 089 4806	TA-SOLID 10U M 4V
C4027	403 068 2007	CERAMIC 0.022U K 25V
C4028	403 073 9107	CERAMIC 4700P K 50V
C4029	403 068 2007	CERAMIC 0.022U K 25V
C4030	403 068 4407	CERAMIC 0.047U K 25V
C4031	403 090 7308	TA-SOLID 4.7U M 10V
C4032	403 073 1200	CERAMIC 0.033U K 50V
C4033	403 068 2007	CERAMIC 0.022U K 25V
C4034	403 068 5107	CERAMIC 0.047U Z 25V
C4035	403 069 5601	CERAMIC 0.01U K 50V
C4036	403 073 9107	CERAMIC 4700P K 50V
C4038	403 134 7400	CERAMIC 1U Z 16V
C4039	403 069 5601	CERAMIC 0.01U K 50V
C4040	403 069 5601	CERAMIC 0.01U K 50V
C4041	403 073 1200	CERAMIC 0.033U K 50V
C4042	403 100 9704	CERAMIC 0.1U M 25V
C4045	403 010 1102	CERAMIC 1000P J 50V
C4201	403 090 7308	TA-SOLID 4.7U M 10V
C4202	403 069 5601	CERAMIC 0.01U K 50V
C4203	403 069 5601	CERAMIC 0.01U K 50V
C4204	403 090 7308	TA-SOLID 4.7U M 10V
C4205	403 068 2007	CERAMIC 0.022U K 25V
C4206	403 068 2007	CERAMIC 0.022U K 25V

Location	Part No.	Description
C4207	403 022 8205	CERAMIC 33P J 50V
C4208	403 022 8205	CERAMIC 33P J 50V
C4209	403 090 7308	TA-SOLID 4.7U M 10V
C4210	403 134 7400	CERAMIC 1U Z 16V
C4211	403 114 3903	CERAMIC 0.22U Z 50V
C4212	403 105 9105	ELECT 10U M 16V
C4213	403 105 9105	ELECT 10U M 16V
C4214	403 068 4407	CERAMIC 0.047U K 25V
C4215	403 068 2007	CERAMIC 0.022U K 25V
C4216	403 068 4407	CERAMIC 0.047U K 25V
C4217	403 100 9704	CERAMIC 0.1U M 25V
C4218	403 134 7400	CERAMIC 1U Z 16V
C4219	403 010 1102	CERAMIC 1000P J 50V
C4220	403 033 9000	CERAMIC 820P J 50V
C4221	403 134 7400	CERAMIC 1U Z 16V
C4301	403 148 2606	ELECT 22U M 25V
C4302	403 148 2606	ELECT 22U M 25V
C4303	403 148 2606	ELECT 22U M 25V
C4305	403 134 7400	CERAMIC 1U Z 16V
C4306	403 069 5601	CERAMIC 0.01U K 50V
C4307	403 073 9107	CERAMIC 4700P K 50V
C4308	403 105 9105	ELECT 10U M 16V
C4309	403 134 7400	CERAMIC 1U Z 16V
C4310	403 105 9105	ELECT 10U M 16V
C4311	403 091 4801	TA-SOLID 3.3U M 16V
C4312	403 134 7400	CERAMIC 1U Z 16V
C4313	403 068 5107	CERAMIC 0.047U Z 25V
C4314	403 068 5107	CERAMIC 0.047U Z 25V
C4315	403 134 7400	CERAMIC 1U Z 16V
C4316	403 134 7400	CERAMIC 1U Z 16V
C4317	403 105 9105	ELECT 10U M 16V
C4318	403 069 5601	CERAMIC 0.01U K 50V
C4319	403 031 2201	CERAMIC 680P J 50V
C4320	403 105 9105	ELECT 10U M 16V
		(DIODES)
D4001	407 004 0706	DIODE DCB015
D4002	636 000 0438	DIODE
D4003	636 000 0438	DIODE
D4004	407 004 0706	DIODE DCB015
D4005	407 004 1000	DIODE DCC010
D4301	636 000 0438	DIODE
D4302	407 004 0706	DIODE DCB015
D4303	407 004 0706	DIODE DCB015
D4304	407 004 0706	DIODE DCB015
		(INTEGRATED CIRCUITS)
IC4001	409 143 6403	IC CXP80116
IC4002	409 018 4008	IC LA6393M-T1
IC4003	409 142 5902	IC PST529D-2
IC4004	409 111 7401	IC LVC550C
IC4005	409 018 3704	IC LA6358M-T1
IC4006	409 018 3704	IC LA6358M-T1
IC4007	409 018 3704	IC LA6358M-T1
IC4008	409 004 8607	IC CX20115-T1
IC4201	409 150 0500	IC CXA1204Q
IC4202	409 018 3704	IC LA6358M-T1
IC4301	409 004 7006	IC CX20036-T1
IC4302	409 004 8508	IC CX20114-T1
IC4303	409 111 8309	IC TA8401F-TP1
		(COILS)
L4001	636 002 8524	LF CHOKE 100UH
L4002	636 002 8524	LF CHOKE 100UH
L4003	636 002 8531	LF CHOKE 100UH
L4004	636 002 9767	HF CHOKE 100UH
L4005	636 002 8531	LF CHOKE 200UH
L4201	636 002 8852	RF CHOKE 100UH
L4202	636 002 8876	RF CHOKE 330UH
		(TRANSISTORS)
Q4001	405 003 7405	TR 2SA1344

Location	Part No.	Description
Q4002	405 003 7108	TR 2SA1341
Q4003	405 018 2402	TR 2SC3398
Q4004	405 003 7108	TR 2SA1341
Q4005	405 018 2402	TR 2SC3398
Q4006	405 047 9304	TR 2SB1205-S
Q4007	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q4008	405 006 8904	TR 2SB1121-T
Q4009	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q4010	405 006 8904	TR 2SB1121-T
Q4011	407 101 5802	PHOTO DIODE PT480FI
Q4012	405 035 1105	TR FMW1-T99
Q4013	407 101 5802	PHOTO DIODE PT480FI
Q4014	405 035 1105	TR FMW1-T99
Q4101	405 035 1105	TR FMW1-T99
Q4301	405 003 7306	TR 2SA1343
Q4302	405 002 6706	TR 2SA1179-M6
Q4303	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q4304	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q4305	405 002 6706	TR 2SA1179-M6
Q4306	405 002 6706	TR 2SA1179-M6
Q4307	405 002 8304	TR 2SA1203-Y
Q4308	405 002 8304	TR 2SA1203-Y
		(RESISTORS)
R4001	401 037 5707	MT-GLAZE 100K J 1/10W
R4002	401 037 5608	MT-GLAZE 10K J 1/10W
R4003	401 037 5608	MT-GLAZE 10K J 1/10W
R4005	401 037 5608	MT-GLAZE 10K J 1/10W
R4006	401 037 5608	MT-GLAZE 10K J 1/10W
R4007	401 037 5707	MT-GLAZE 100K J 1/10W
R4008	401 037 5608	MT-GLAZE 10K J 1/10W
R4009	401 037 5608	MT-GLAZE 10K J 1/10W
R4010	401 037 5608	MT-GLAZE 10K J 1/10W
R4011	401 037 5707	MT-GLAZE 100K J 1/10W
R4012	401 037 5608	MT-GLAZE 10K J 1/10W
R4013	401 037 5202	MT-GLAZE 100 J 1/10W
R4014	401 037 5707	MT-GLAZE 100K J 1/10W
R4015	401 037 5707	MT-GLAZE 100K J 1/10W
R4016	401 037 5707	MT-GLAZE 100K J 1/10W
R4017	401 038 2309	MT-GLAZE 270K J 1/10W
R4018	401 037 5707	MT-GLAZE 100K J 1/10W
R4019	401 038 0602	MT-GLAZE 220 J 1/10W
R4020	401 037 5608	MT-GLAZE 10K J 1/10W
R4021	401 038 5300	MT-GLAZE 39K J 1/10W
R4022	401 038 5409	MT-GLAZE 390K J 1/10W
R4023	401 038 5409	MT-GLAZE 390K J 1/10W
R4024	401 038 5300	MT-GLAZE 39K J 1/10W
R4025	401 038 5409	MT-GLAZE 390K J 1/10W
R4026	401 038 5102	MT-GLAZE 3.9K J 1/10W
R4027	401 037 5608	MT-GLAZE 10K J 1/10W
R4028	401 038 5409	MT-GLAZE 390K J 1/10W
R4029	401 038 5300	MT-GLAZE 39K J 1/10W
R4030	401 038 5300	MT-GLAZE 39K J 1/10W
R4031	401 038 5409	MT-GLAZE 390K J 1/10W
R4032	401 038 5409	MT-GLAZE 390K J 1/10W
R4033	401 038 5102	MT-GLAZE 3.9K J 1/10W
R4034	401 037 8104	MT-GLAZE 150K J 1/10W
R4035	401 038 9308	MT-GLAZE 68K J 1/10W
R4037	401 038 9308	MT-GLAZE 68K J 1/10W
R4038	401 038 5300	MT-GLAZE 39K J 1/10W
R4039	401 038 5300	MT-GLAZE 39K J 1/10W
R4040	401 038 6505	MT-GLAZE 47K J 1/10W
R4041	401 037 5608	MT-GLAZE 10K J 1/10W
R4042	401 038 0800	MT-GLAZE 22K J 1/10W
R4043	401 038 3702	MT-GLAZE 33K J 1/10W
R4044	401 037 5608	MT-GLAZE 10K J 1/10W
R4047	401 037 5608	MT-GLAZE 10K J 1/10W
R4049	401 038 6307	MT-GLAZE 470 J 1/10W
R4050	401 037 5400	MT-GLAZE 1K J 1/10W

Location	Part No.	Description
R4051	401 037 5400	MT-GLAZE 1K J 1/10W
R4052	401 037 1907	MT-GLAZE 680 J 1/8W
R4053	401 037 1907	MT-GLAZE 680 J 1/8W
R4054	401 037 1907	MT-GLAZE 680 J 1/8W
R4055	401 037 5608	MT-GLAZE 10K J 1/10W
R4056	401 037 5608	MT-GLAZE 10K J 1/10W
R4057	401 037 5400	MT-GLAZE 1K J 1/10W
R4058	401 038 6307	MT-GLAZE 470 J 1/10W
R4059	401 037 5202	MT-GLAZE 100 J 1/10W
R4060	401 038 0800	MT-GLAZE 22K J 1/10W
R4061	401 038 0800	MT-GLAZE 22K J 1/10W
R4062	401 038 6604	MT-GLAZE 470K J 1/10W
R4063	401 037 5608	MT-GLAZE 10K J 1/10W
R4064	401 037 5608	MT-GLAZE 10K J 1/10W
R4065	401 037 5608	MT-GLAZE 10K J 1/10W
R4067	401 037 5608	MT-GLAZE 10K J 1/10W
R4068	401 037 5608	MT-GLAZE 10K J 1/10W
R4069	401 037 8104	MT-GLAZE 150K J 1/10W
R4070	401 038 0800	MT-GLAZE 22K J 1/10W
R4071	401 037 5608	MT-GLAZE 10K J 1/10W
R4072	401 038 9902	MT-GLAZE 750K J 1/10W
R4073	401 038 6604	MT-GLAZE 470K J 1/10W
R4074	401 038 9902	MT-GLAZE 750K J 1/10W
R4075	401 038 6604	MT-GLAZE 470K J 1/10W
R4076	401 038 6109	MT-GLAZE 430K J 1/10W
R4077	401 038 0909	MT-GLAZE 220K J 1/10W
R4078	401 038 6505	MT-GLAZE 47K J 1/10W
R4079	401 037 5707	MT-GLAZE 100K J 1/10W
R4080	401 038 6604	MT-GLAZE 470K J 1/10W
R4081	401 037 5608	MT-GLAZE 10K J 1/10W
R4082	401 037 5707	MT-GLAZE 100K J 1/10W
R4083	401 038 6505	MT-GLAZE 47K J 1/10W
R4084	401 037 5707	MT-GLAZE 100K J 1/10W
R4085	401 038 6604	MT-GLAZE 470K J 1/10W
R4086	401 037 5608	MT-GLAZE 10K J 1/10W
R4087	401 037 5707	MT-GLAZE 100K J 1/10W
R4088	401 038 7601	MT-GLAZE 560 J 1/10W
R4089	401 037 5806	MT-GLAZE 1M J 1/10W
R4090	401 038 9407	MT-GLAZE 680K J 1/10W
R4091	401 037 5608	MT-GLAZE 10K J 1/10W
R4092	401 038 6208	MT-GLAZE 47 J 1/10W
R4095	401 038 6406	MT-GLAZE 4.7K J 1/10W
R4096	401 038 6406	MT-GLAZE 4.7K J 1/10W
R4097	401 037 5202	MT-GLAZE 100 J 1/10W
R4099	401 038 0602	MT-GLAZE 220 J 1/10W
R4101	401 038 0909	MT-GLAZE 220K J 1/10W
R4102	401 038 0909	MT-GLAZE 220K J 1/10W
R4103	401 038 0909	MT-GLAZE 220K J 1/10W
R4104	401 038 0800	MT-GLAZE 22K J 1/10W
R4105	401 038 0800	MT-GLAZE 22K J 1/10W
R4106	401 038 0800	MT-GLAZE 22K J 1/10W
R4201	401 037 5608	MT-GLAZE 10K J 1/10W
R4202	401 038 9407	MT-GLAZE 680K J 1/10W
R4203	401 037 5608	MT-GLAZE 10K J 1/10W
R4206	401 037 5608	MT-GLAZE 10K J 1/10W
R4207	401 037 5608	MT-GLAZE 10K J 1/10W
R4208	401 037 6704	MT-GLAZE 1.2K J 1/10W
R4209	401 037 5806	MT-GLAZE 1M J 1/10W
R4210	401 037 5400	MT-GLAZE 1K J 1/10W
R4211	401 037 6902	MT-GLAZE 120K J 1/10W
R4212	401 037 5608	MT-GLAZE 10K J 1/10W
R4213	401 038 6505	MT-GLAZE 47K J 1/10W
R4214	401 037 5608	MT-GLAZE 10K J 1/10W
R4215	401 037 5707	MT-GLAZE 100K J 1/10W
R4216	401 037 5608	MT-GLAZE 10K J 1/10W
R4217	401 037 5707	MT-GLAZE 100K J 1/10W
R4218	401 037 5608	MT-GLAZE 10K J 1/10W
R4219	401 037 5707	MT-GLAZE 100K J 1/10W
R4220	401 037 8104	MT-GLAZE 150K J 1/10W
R4221	401 037 8104	MT-GLAZE 150K J 1/10W
R4222	401 038 5003	MT-GLAZE 390 J 1/10W
R4223	401 037 5608	MT-GLAZE 10K J 1/10W

Location	Part No.	Description
R4224	401 038 7700	MT-GLAZE 5.6K J 1/10W
R4225	401 038 6406	MT-GLAZE 4.7K J 1/10W
R4226	401 037 5004	MT-GLAZE 0 Z 1/10W
R4301	401 037 6902	MT-GLAZE 120K J 1/10W
R4302	401 037 8005	MT-GLAZE 15K J 1/10W
R4303	401 038 7700	MT-GLAZE 5.6K J 1/10W
R4304	401 040 9600	MT-FILM 0.22 F 1/4W
R4305	401 038 3603	MT-GLAZE 3.3K J 1/10W
R4306	401 037 8005	MT-GLAZE 15K J 1/10W
R4307	401 038 2507	MT-GLAZE 3.3 J 1/10W
R4308	401 038 2507	MT-GLAZE 3.3 J 1/10W
R4309	401 038 2507	MT-GLAZE 3.3 J 1/10W
R4310	401 037 6803	MT-GLAZE 12K J 1/10W
R4311	401 038 9209	MT-GLAZE 6.8K J 1/10W
R4312	401 037 8005	MT-GLAZE 15K J 1/10W
R4314	401 038 6604	MT-GLAZE 470K J 1/10W
R4315	401 037 5608	MT-GLAZE 10K J 1/10W
R4316	401 037 8005	MT-GLAZE 15K J 1/10W
R4317	401 037 5400	MT-GLAZE 1K J 1/10W
R4318	401 037 8104	MT-GLAZE 150K J 1/10W
R4319	401 037 5202	MT-GLAZE 100 J 1/10W
R4320	401 038 3702	MT-GLAZE 33K J 1/10W
R4321	401 038 0800	MT-GLAZE 22K J 1/10W
R4322	401 039 0304	MT-GLAZE 820 J 1/10W
R4323	401 038 6505	MT-GLAZE 47K J 1/10W
R4324	401 038 6406	MT-GLAZE 4.7K J 1/10W
R4325	401 038 7700	MT-GLAZE 5.6K J 1/10W
R4327	401 037 5400	MT-GLAZE 1K J 1/10W
R4328	401 038 6307	MT-GLAZE 470 J 1/10W
R4330	401 037 6902	MT-GLAZE 120K J 1/10W
R4331	401 038 6406	MT-GLAZE 4.7K J 1/10W
R4332	401 037 8005	MT-GLAZE 15K J 1/10W
R4333	401 038 6406	MT-GLAZE 4.7K J 1/10W
R4334	401 037 5707	MT-GLAZE 100K J 1/10W
R4335	401 037 5400	MT-GLAZE 1K J 1/10W
R4336	401 037 5707	MT-GLAZE 100K J 1/10W
R4337	401 037 5400	MT-GLAZE 1K J 1/10W
R4338	401 037 5103	MT-GLAZE 10 J 1/10W
R4339	401 037 5608	MT-GLAZE 10K J 1/10W
R4340	401 038 6505	MT-GLAZE 47K J 1/10W
R4341	401 038 2101	MT-GLAZE 2.7K J 1/10W
		(SEMI VARIABLE RESISTORS)
SVR4001	636 000 2951	SEMI VR, 10K OHM
SVR4002	636 000 2975	SEMI VR, 22K OHM
SVR4003	636 000 2975	SEMI VR, 22K OHM
		(MISCELLANEOUS)
F4001	⚠ 636 000 0360	CIRCUIT PROTECTOR, 0.4A
F4002	⚠ 636 000 0391	CIRCUIT PROTECTOR, 1.0A
X4001	636 000 4948	CRYSTAL, 16MHZ
X4201	636 000 4917	CRYSTAL

SY-1 CIRCUIT BOARD

Location	Part No.	Description
		(CAPACITORS)
C3001	403 068 0409	CERAMIC 0.1U Z 25V
C3002	403 090 7308	TA-SOLID 4.7U M 10V
C3003	403 068 0409	CERAMIC 0.1U Z 25V
C3005	403 069 5601	CERAMIC 0.01U K 50V
C3006	403 149 7303	CERAMIC 0.47U Z 16V
C3007	403 069 5601	CERAMIC 0.01U K 50V
C3008	403 068 0409	CERAMIC 0.1U Z 25V
C3009	403 069 5601	CERAMIC 0.01U K 50V

Location	Part No.	Description
		(DIODES)
D3001	407 004 0201	DIODE DCA015
D3002	407 004 0201	DIODE DCA015
D3003	407 004 0201	DIODE DCA015
D3006	407 004 0201	DIODE DCA015
D3007	407 004 0201	DIODE DCA015
D3010	407 004 0201	DIODE DCA015
		(INTEGRATED CIRCUITS)
IC3001	409 143 6304	IC NJM022M(T1)
		(TRANSISTORS)
Q3003	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q3004	405 018 1900	TR 2SC3395
Q3005	405 018 1900	TR 2SC3395
Q3006	405 018 1900	TR 2SC3395
Q3007	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q3008	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q3009	405 027 1403	TR 2SK303-V3
Q3010	405 061 4101	TR 2SA1434
		(RESISTORS)
R3004	401 037 5707	MT-GLAZE 100K J 1/10W
R3006	401 037 6902	MT-GLAZE 120K J 1/10W
R3007	401 037 9408	MT-GLAZE 180K J 1/10W
R3008	401 037 5707	MT-GLAZE 100K J 1/10W
R3009	401 037 9408	MT-GLAZE 180K J 1/10W
R3010	401 037 9408	MT-GLAZE 180K J 1/10W
R3011	401 038 1005	MT-GLAZE 2.2M J 1/10W
R3012	401 038 6505	MT-GLAZE 47K J 1/10W
R3013	401 037 5103	MT-GLAZE 10 J 1/10W
R3015	401 037 5608	MT-GLAZE 10K J 1/10W
R3016	401 038 5300	MT-GLAZE 39K J 1/10W
R3017	401 038 5300	MT-GLAZE 39K J 1/10W
R3018	401 038 6505	MT-GLAZE 47K J 1/10W
R3019	401 037 5707	MT-GLAZE 100K J 1/10W
R3020	401 038 6505	MT-GLAZE 47K J 1/10W
R3021	401 037 5806	MT-GLAZE 1M J 1/10W
R3022	401 037 5400	MT-GLAZE 1K J 1/10W
R3023	401 037 5806	MT-GLAZE 1M J 1/10W
R3024	401 037 5707	MT-GLAZE 100K J 1/10W
R3025	401 037 5806	MT-GLAZE 1M J 1/10W
R3026	401 037 5400	MT-GLAZE 1K J 1/10W
		(SEMI VARIABLE RESISTORS)
SVR3001	636 000 2975	SEMI VR, 22K OHM
		(SWITCHES)
S3001	636 000 8571	PUSH SWITCH
S3002	636 000 8571	PUSH SWITCH
S3003	636 000 8571	PUSH SWITCH
S3004	636 000 8571	PUSH SWITCH
S3005	636 000 8571	PUSH SWITCH
S3006	636 000 8571	PUSH SWITCH

SY-2 CIRCUIT BOARD

Location	Part No.	Description
		(CAPACITORS)
C3101	403 105 9105	ELECT 10U M 16V
C3102	403 043 9700	ELECT 47U M 16V
C3104	403 022 8205	CERAMIC 33P J 50V
C3105	403 018 7403	CERAMIC 220P J 50V
C3106	403 018 7403	CERAMIC 220P J 50V
C3110	403 067 9304	CERAMIC 0.01U K 25V
C3111	403 020 0409	CERAMIC 27P J 50V
C3121	403 069 5601	CERAMIC 0.01U K 50V
C3122	403 149 7303	CERAMIC 0.47U Z 16V
C3136	403 149 7709	CERAMIC 2200P J 50V
C3137	403 134 7400	CERAMIC 1U Z 16V
C3138	403 068 2007	CERAMIC 0.022U K 25V
C3139	403 068 5107	CERAMIC 0.047U Z 25V
C3140	403 149 7303	CERAMIC 0.47U Z 16V
C3142	403 009 5708	CERAMIC 100P J 50V
C3143	403 068 5107	CERAMIC 0.047U Z 25V
C3150	403 134 7400	CERAMIC 1U Z 16V
C3152	403 009 5708	CERAMIC 100P J 50V
C3153	403 009 5708	CERAMIC 100P J 50V
C3154	403 009 5708	CERAMIC 100P J 50V
		(DIODES)
D3101	407 004 0201	DIODE DCA015
D3102	407 004 0201	DIODE DCA015
D3120	407 057 8902	ZENER DIODE RD8.2MB2
D3121	407 057 8902	ZENER DIODE RD8.2MB2
D3122	407 057 8902	ZENER DIODE RD8.2MB2
D3123	407 057 8902	ZENER DIODE RD8.2MB2
D3127	407 004 0201	DIODE DCA015
D3130	407 101 5703	LED BR2202S-B1
		(INTEGRATED CIRCUITS)
IC3101	410 047 9704	IC UPD75306GF-023-3B9
IC3102	409 142 5803	IC UPD6145G-101-T1
IC3103	409 142 6008	IC BA7135F-T1
		(COILS)
L3101	636 002 8876	RF CHOKE 330UH
L3102	636 002 9101	HF CHOKE 39UH
		(TRANSISTORS)
Q3121	405 018 1900	TR 2SC3395
Q3122	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q3123	405 018 2402	TR 2SC3398
Q3124	405 018 1900	TR 2SC3395
Q3125	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
Q3126	405 015 8407	TR 2SC2812-L5
or	405 015 8704	TR 2SC2812-L6
		(RESISTORS)
R3102	401 037 5707	MT-GLAZE 100K J 1/10W
R3103	401 037 8104	MT-GLAZE 150K J 1/10W
R3104	401 037 5608	MT-GLAZE 10K J 1/10W
R3105	401 037 5608	MT-GLAZE 10K J 1/10W
R3106	401 037 5608	MT-GLAZE 10K J 1/10W
R3107	401 037 5400	MT-GLAZE 1K J 1/10W
R3108	401 037 8005	MT-GLAZE 15K J 1/10W
R3110	401 038 3801	MT-GLAZE 330K J 1/10W
R3122	401 038 0800	MT-GLAZE 22K J 1/10W
R3123	401 038 0909	MT-GLAZE 220K J 1/10W
R3124	401 038 6505	MT-GLAZE 47K J 1/10W
R3125	401 038 6505	MT-GLAZE 47K J 1/10W
R3130	401 038 6307	MT-GLAZE 470 J 1/10W
R3131	401 037 6803	MT-GLAZE 12K J 1/10W
R3132	401 037 5608	MT-GLAZE 10K J 1/10W
R3135	401 037 9309	MT-GLAZE 18K J 1/10W
R3136	401 038 0800	MT-GLAZE 22K J 1/10W
R3137	401 038 7700	MT-GLAZE 5.6K J 1/10W
R3142	401 038 0909	MT-GLAZE 220K J 1/10W
R3150	401 038 6505	MT-GLAZE 47K J 1/10W
R3151	401 038 6505	MT-GLAZE 47K J 1/10W
R3152	401 038 5300	MT-GLAZE 39K J 1/10W
R3154	401 038 6505	MT-GLAZE 47K J 1/10W
R3155	401 037 5707	MT-GLAZE 100K J 1/10W
R3156	401 037 5608	MT-GLAZE 10K J 1/10W

Location	Part No.	Description
R3160	401 037 5400	MT-GLAZE 1K J 1/10W
R3161	401 037 5400	MT-GLAZE 1K J 1/10W
R3162	401 037 5004	MT-GLAZE 0 Z 1/10W
		(SEMI VARIABLE RESISTORS)
SVR3101	636 000 2975	SEMI VR, 22K OHM
		(SWITCHES)
S3101	636 000 8311	SLIDE SWITCH
S3102	636 000 8571	PUSH SWITCH
S3103	636 000 8571	PUSH SWITCH
S3104	636 000 8311	SLIDE SWITCH
S3105	636 000 8571	PUSH SWITCH
S3106	636 000 8571	PUSH SWITCH
		(MISCELLANEOUS)
CT3103	636 000 4795	TRIMMER
CT3112	636 000 4795	TRIMMER
X3101	636 000 5099	CRYSTAL
X3102	636 003 4945	CERAMIC RESONATOR

TB-1 CIRCUIT BOARD

Location	Part No.	Description
		(DIODES)
D8601	407 050 6202	ZENER DIODE GZA6.2Y
		(SWITCHES)
S8601	636 018 7344	SW,PUSH 1P-1T

CA-1 CIRCUIT BOARD

Location	Part No.	Description
	636 013 8681	SHIELD PLATE, SIDE A
	636 013 8698	SHIELD PLATE, SIDE B
	636 013 9459	INSULATOR
		(CAPACITORS)
C9101	403 068 0409	CERAMIC 0.1U Z 25V
C9102	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9103	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9104	403 068 0409	CERAMIC 0.1U Z 25V
C9105	403 040 3701	ELECT 220U M 10V
C9106	403 018 0503	CERAMIC 22P J 50V
C9107	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9108	403 068 0409	CERAMIC 0.1U Z 25V
C9109	403 028 4102	CERAMIC 56P J 50V
C9111	403 028 4102	CERAMIC 56P J 50V
C9112	403 068 0409	CERAMIC 0.1U Z 25V
C9113	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9114	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9115	403 068 0409	CERAMIC 0.1U Z 25V
C9116	403 140 6602	TA-SOLID 1U M 16V
or	403 091 4801	TA-SOLID 3.3U M 16V
C9117	403 140 5506	TA-SOLID 10U M 4V
C9117	403 089 4806	TA-SOLID 10U M 4V
C9118	403 068 0409	CERAMIC 0.1U Z 25V
C9119	403 068 0409	CERAMIC 0.1U Z 25V
C9121	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9122	403 009 5708	CERAMIC 100P J 50V
C9123	403 009 5708	CERAMIC 100P J 50V
C9124	403 028 4102	CERAMIC 56P J 50V
C9125	403 028 4102	CERAMIC 56P J 50V
C9126	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9127	403 068 0409	CERAMIC 0.1U Z 25V
C9128	403 140 6701	TA-SOLID 3.3U M 16V
or	403 091 4801	TA-SOLID 3.3U M 16V
C9129	403 140 6701	TA-SOLID 3.3U M 16V
or	403 091 4801	TA-SOLID 3.3U M 16V
C9131	403 140 6701	TA-SOLID 3.3U M 16V
or	403 091 4801	TA-SOLID 3.3U M 16V
C9132	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9133	403 012 6808	CERAMIC 15P J 50V
C9134	403 008 7406	CERAMIC 10P D 50V
C9135	403 008 7406	CERAMIC 10P D 50V
C9136	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9137	403 068 0409	CERAMIC 0.1U Z 25V
C9138	403 008 7406	CERAMIC 10P D 50V
C9139	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9141	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9142	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9143	403 140 7203	TA-SOLID 0.47U M 25V
or	403 091 8809	TA-SOLID 0.47U M 25V
C9144	403 140 7203	TA-SOLID 0.47U M 25V
or	403 091 8809	TA-SOLID 0.47U M 25V
C9145	403 140 7203	TA-SOLID 0.47U M 25V
or	403 091 8809	TA-SOLID 0.47U M 25V
C9146	403 140 7203	TA-SOLID 0.47U M 25V
or	403 091 8809	TA-SOLID 0.47U M 25V
C9147	403 140 7203	TA-SOLID 0.47U M 25V
or	403 091 8809	TA-SOLID 0.47U M 25V
C9148	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9149	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9151	403 069 5601	CERAMIC 0.01U K 50V
C9152	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9153	403 069 5601	CERAMIC 0.01U K 50V
C9154	403 140 5506	TA-SOLID 10U M 4V
or	403 089 4806	TA-SOLID 10U M 4V
C9156	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9157	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9158	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9159	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9161	403 068 0409	CERAMIC 0.1U Z 25V
C9162	403 068 0409	CERAMIC 0.1U Z 25V
C9163	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9164	403 140 6701	TA-SOLID 3.3U M 16V
or	403 091 4801	TA-SOLID 3.3U M 16V
C9165	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9166	403 069 5601	CERAMIC 0.01U K 50V
C9168	403 140 6008	TA-SOLID 6.8U M 6.3V
or	403 090 2006	TA-SOLID 6.8U M 6.3V
C9169	403 069 5601	CERAMIC 0.01U K 50V

Location	Part No.	Description
C9172	403 040 3701	ELECT 220U M 10V
C9173	403 010 1102	CERAMIC 1000P J 50V
C9174	403 010 1102	CERAMIC 1000P J 50V
C9175	403 069 5601	CERAMIC 0.01U K 50V
C9177	403 068 0409	CERAMIC 0.1U Z 25V
		(DIODES)
D9101	407 004 0706	DIODE DCB015
D9102	407 004 5602	DIODE DSA015
D9103	407 004 0706	DIODE DCB015
D9104	407 004 0706	DIODE DCB015
D9105	407 004 0706	DIODE DCB015
D9106	407 004 0706	DIODE DCB015
D9107	407 008 6209	DIODE MA153-TX
D9108	407 004 0201	DIODE DCA015
D9109	407 054 4303	ZENER DIODE RD12MB3
D9111	407 099 2906	VARACTOR DI 1SV200-11TLC
		(INTEGRATED CIRCUITS)
IC9101	409 140 9704	IC AN2011S-(T1)
IC9103	409 111 6107	IC CXB0026M-T1
IC9104	409 004 9109	IC CX20180-T1
IC9107	409 119 8707	IC CXD1157Q-Z
IC9108	409 111 5902	IC AN608P
IC9109	409 119 8806	IC CXD1158M-T1
IC9111	409 144 3708	IC TC4S11F(TE85L)
		(COILS)
L9101	636 002 9880	HF CHOKE 1000UH
L9102	636 003 2101	HF CHOKE 10UH
L9103	636 003 2101	HF CHOKE 10UH
L9104	636 003 2101	HF CHOKE 10UH
L9105	636 003 2101	HF CHOKE 10UH
L9106	636 003 2101	HF CHOKE 10UH
L9108	636 003 5379	CORE
L9109	636 003 5379	CORE
L9111	636 003 5379	CORE
L9112	636 003 2101	HF CHOKE 10UH
		(TRANSISTORS)
Q9101	405 060 7004	TR 2SC1009-A3
Q9102	405 043 8509	TR 2SA1256-E4
Q9103	405 015 9701	TR 2SC2814-F4
Q9104	405 015 8704	TR 2SC2812-L6
Q9105	405 002 6706	TR 2SA1179-M6
		(RESISTORS)
R9101	401 037 5707	MT-GLAZE 100K J 1/10W
R9102	401 037 5707	MT-GLAZE 100K J 1/10W
R9103	401 038 2101	MT-GLAZE 2.7K J 1/10W
R9104	401 037 9309	MT-GLAZE 18K J 1/10W
R9105	401 037 5707	MT-GLAZE 100K J 1/10W
R9106	401 037 5400	MT-GLAZE 1K J 1/10W
R9107	401 037 5400	MT-GLAZE 1K J 1/10W
R9109	401 037 5004	MT-GLAZE 0 Z 1/10W
R9113	401 037 7909	MT-GLAZE 1.5K J 1/10W
R9115	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9116	401 038 3405	MT-GLAZE 33 J 1/10W
R9117	401 038 3405	MT-GLAZE 33 J 1/10W
R9118	401 038 3405	MT-GLAZE 33 J 1/10W
R9119	401 037 5608	MT-GLAZE 10K J 1/10W
R9121	401 037 5400	MT-GLAZE 1K J 1/10W
R9122	401 037 6803	MT-GLAZE 12K J 1/10W
R9123	401 037 5400	MT-GLAZE 1K J 1/10W
R9124	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9126	401 037 8005	MT-GLAZE 15K J 1/10W
R9139	401 037 5004	MT-GLAZE 0 Z 1/10W
R9145	401 037 5400	MT-GLAZE 1K J 1/10W
R9146	401 037 5707	MT-GLAZE 100K J 1/10W
R9147	401 037 5707	MT-GLAZE 100K J 1/10W
R9148	401 037 5707	MT-GLAZE 100K J 1/10W
R9149	401 037 5707	MT-GLAZE 100K J 1/10W

Location	Part No.	Description
R9151	401 037 5400	MT-GLAZE 1K J 1/10W
R9154	401 037 5806	MT-GLAZE 1M J 1/10W
R9155	401 038 9001	MT-GLAZE 680 J 1/10W
R9156	401 038 3504	MT-GLAZE 330 J 1/10W
R9157	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9158	401 037 6803	MT-GLAZE 12K J 1/10W
R9165	401 037 5608	MT-GLAZE 10K J 1/10W
R9166	401 037 5004	MT-GLAZE 0 Z 1/10W
or	401 038 5102	MT-GLAZE 3.9K J 1/10W
R9167	401 037 5004	MT-GLAZE 0 Z 1/10W
or	401 037 6704	MT-GLAZE 1.2K J 1/10W
R9168	401 037 5004	MT-GLAZE 0 Z 1/10W
or	401 038 5102	MT-GLAZE 3.9K J 1/10W
R9169	401 037 6704	MT-GLAZE 1.2K J 1/10W
R9171	401 037 7909	MT-GLAZE 1.5K J 1/10W
R9172	401 037 5806	MT-GLAZE 1M J 1/10W
R9173	401 037 5608	MT-GLAZE 10K J 1/10W
R9174	401 037 5707	MT-GLAZE 100K J 1/10W
R9175	401 038 9803	MT-GLAZE 75K J 1/10W
R9176	401 037 5004	MT-GLAZE 0 Z 1/10W
R9177	401 038 5300	MT-GLAZE 39K J 1/10W
R9181	401 037 9309	MT-GLAZE 18K J 1/10W
R9182	401 037 5608	MT-GLAZE 10K J 1/10W
R9184	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9185	401 037 5608	MT-GLAZE 10K J 1/10W
R9186	401 037 5608	MT-GLAZE 10K J 1/10W
R9194	401 037 5608	MT-GLAZE 10K J 1/10W
R9195	401 036 1403	MT-GLAZE 220 J 1/8W
R9196	401 037 5004	MT-GLAZE 0 Z 1/10W
or	401 037 5004	MT-GLAZE 0 Z 1/10W
R9198	401 037 5400	MT-GLAZE 1K J 1/10W
R9278	401 038 3603	MT-GLAZE 3.3K J 1/10W
		(SEMI VARIABLE RESISTORS)
SVR9101	636 000 2951	SEMI VR, 10K OHM
		(TRANSFORMERS)
T9101	636 003 4495	HF COIL TRANS
		(MISCELLANEOUS)
F9101	⚠ 636 003 6154	FILTER
VC9101	636 000 4740	TRIMMER
X9101	636 000 5013	CRYSTAL UNIT
X9102	636 000 4955	CRYSTAL, 17.734476,MHZ

CA-2 CIRCUIT BOARD

Location	Part No.	Description
		(CAPACITORS)
C9201	403 153 1205	ELECT 47U M 16V
C9202	403 153 0901	ELECT 100U M 6.3V
C9203	403 092 6606	TA-SOLID 0.22U M 35V
C9205	403 068 0409	CERAMIC 0.1U Z 25V
C9206	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9207	403 069 5601	CERAMIC 0.01U K 50V
C9208	403 068 5107	CERAMIC 0.047U Z 25V
C9211	403 068 5107	CERAMIC 0.047U Z 25V
C9212	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9213	403 017 0900	CERAMIC 20P J 50V
C9214	403 152 9707	ELECT 22U M 6.3V
C9215	403 068 0409	CERAMIC 0.1U Z 25V
C9216	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9217	403 068 0409	CERAMIC 0.1U Z 25V
C9218	403 150 2106	NP-ELECT 4.7U M 25V

Location	Part No.	Description
C9219	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9221	403 092 6606	TA-SOLID 0.22U M 35V
C9222	403 069 5601	CERAMIC 0.01U K 50V
C9223	403 069 5601	CERAMIC 0.01U K 50V
C9224	403 140 6701	TA-SOLID 3.3U M 16V
or	403 091 4801	TA-SOLID 3.3U M 16V
C9225	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9226	403 069 5601	CERAMIC 0.01U K 50V
C9227	403 069 5601	CERAMIC 0.01U K 50V
C9228	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9229	403 068 0409	CERAMIC 0.1U Z 25V
C9231	403 068 0409	CERAMIC 0.1U Z 25V
C9232	403 030 6903	CERAMIC 68P J 50V
C9233	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9234	403 068 0409	CERAMIC 0.1U Z 25V
C9235	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9236	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9237	403 068 0409	CERAMIC 0.1U Z 25V
C9239	403 068 0409	CERAMIC 0.1U Z 25V
C9241	403 153 1205	ELECT 47U M 16V
C9242	403 068 0409	CERAMIC 0.1U Z 25V
C9243	403 068 0409	CERAMIC 0.1U Z 25V
C9244	403 010 8507	CERAMIC 12P J 50V
C9245	403 010 8507	CERAMIC 12P J 50V
C9246	403 068 0409	CERAMIC 0.1U Z 25V
C9247	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9248	403 010 8507	CERAMIC 12P J 50V
C9249	403 068 0409	CERAMIC 0.1U Z 25V
C9251	403 010 8507	CERAMIC 12P J 50V
C9252	403 010 8507	CERAMIC 12P J 50V
C9253	403 010 8507	CERAMIC 12P J 50V
C9254	403 068 0409	CERAMIC 0.1U Z 25V
C9255	403 010 8507	CERAMIC 12P J 50V
C9256	403 068 0409	CERAMIC 0.1U Z 25V
C9257	403 068 0409	CERAMIC 0.1U Z 25V
C9258	403 068 0409	CERAMIC 0.1U Z 25V
C9259	403 068 0409	CERAMIC 0.1U Z 25V
C9261	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9262	403 068 0409	CERAMIC 0.1U Z 25V
C9263	403 068 0409	CERAMIC 0.1U Z 25V
C9264	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9265	403 069 5601	CERAMIC 0.01U K 50V
C9266	403 069 5601	CERAMIC 0.01U K 50V
C9267	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9268	403 068 0409	CERAMIC 0.1U Z 25V
C9269	403 068 0409	CERAMIC 0.1U Z 25V
C9271	403 068 0409	CERAMIC 0.1U Z 25V
C9272	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9273	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9274	403 028 9800	CERAMIC 560P J 50V
C9275	403 040 3701	ELECT 220U M 10V
or	403 038 6301	ELECT 220U M 6.3V
C9276	403 039 3507	ELECT 470U M 6.3V
		(DIODES)
D9201	407 004 0201	DIODE DCA015
D9202	407 004 0201	DIODE DCA015
		(INTEGRATED CIRCUITS)
IC9201	409 140 9803	IC AN2151S-(E1)

Location	Part No.	Description
IC9202	409 020 7301	IC LC4013BM-T1
IC9203	409 141 0007	IC AN2351S-(E1)
IC9204	409 119 8905	IC MSM6985MS-K
IC9205	409 119 8905	IC MSM6985MS-K
		(COILS)
L9201	636 003 2101	HF CHOKE 10UH
L9202	636 003 2194	HF CHOKE 56UH
L9203	636 003 2101	HF CHOKE 10UH
L9204	636 002 9866	HF CHOKE 680UH
L9205	636 003 2101	HF CHOKE 10UH
L9206	636 003 2101	HF CHOKE 10UH
		(TRANSISTORS)
Q9201	405 002 6706	TR 2SA1179-M6
Q9202	405 015 8704	TR 2SC2812-L6
Q9204	405 015 8704	TR 2SC2812-L6
Q9205	405 015 8704	TR 2SC2812-L6
Q9206	405 015 8704	TR 2SC2812-L6
Q9207	405 015 8704	TR 2SC2812-L6
Q9208	405 015 8704	TR 2SC2812-L6
Q9209	405 015 8704	TR 2SC2812-L6
Q9211	405 015 8704	TR 2SC2812-L6
Q9212	405 035 1105	TR FMW1-T99
Q9213	405 002 6706	TR 2SA1179-M6
Q9214	405 002 6706	TR 2SA1179-M6
Q9215	405 015 8704	TR 2SC2812-L6
		(RESISTORS)
R9201	401 037 5004	MT-GLAZE 0 Z 1/10W
R9203	401 038 3702	MT-GLAZE 33K J 1/10W
R9204	401 037 5608	MT-GLAZE 10K J 1/10W
R9205	401 038 5300	MT-GLAZE 39K J 1/10W
R9206	401 038 0800	MT-GLAZE 22K J 1/10W
R9207	401 038 2200	MT-GLAZE 27K J 1/10W
R9208	401 037 8005	MT-GLAZE 15K J 1/10W
R9209	401 039 0502	MT-GLAZE 82K J 1/10W
R9211	401 037 5400	MT-GLAZE 1K J 1/10W
R9212	401 037 5400	MT-GLAZE 1K J 1/10W
R9216	401 037 5608	MT-GLAZE 10K J 1/10W
R9217	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9218	401 038 2309	MT-GLAZE 270K J 1/10W
R9219	401 037 5707	MT-GLAZE 100K J 1/10W
R9221	401 037 5608	MT-GLAZE 10K J 1/10W
R9222	401 037 5608	MT-GLAZE 10K J 1/10W
R9223	401 039 0502	MT-GLAZE 82K J 1/10W
R9225	401 037 5400	MT-GLAZE 1K J 1/10W
R9226	401 037 5400	MT-GLAZE 1K J 1/10W
R9227	401 038 9001	MT-GLAZE 680 J 1/10W
R9228	401 038 6307	MT-GLAZE 470 J 1/10W
R9229	401 038 7601	MT-GLAZE 560 J 1/10W
R9231	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9232	401 037 9309	MT-GLAZE 18K J 1/10W
R9233	401 037 5400	MT-GLAZE 1K J 1/10W
R9234	401 037 5400	MT-GLAZE 1K J 1/10W
R9237	401 038 2200	MT-GLAZE 27K J 1/10W
R9238	401 038 3702	MT-GLAZE 33K J 1/10W
R9239	401 038 0800	MT-GLAZE 22K J 1/10W
R9241	401 038 3702	MT-GLAZE 33K J 1/10W
R9244	401 038 5102	MT-GLAZE 3.9K J 1/10W
R9245	401 038 5102	MT-GLAZE 3.9K J 1/10W
R9246	401 039 0809	MT-GLAZE 91 J 1/10W
R9247	401 037 5400	MT-GLAZE 1K J 1/10W
R9248	401 037 5400	MT-GLAZE 1K J 1/10W
R9249	401 038 9001	MT-GLAZE 680 J 1/10W
R9251	401 037 5400	MT-GLAZE 1K J 1/10W
R9252	401 037 7909	MT-GLAZE 1.5K J 1/10W
R9253	401 038 2200	MT-GLAZE 27K J 1/10W
R9254	401 038 3702	MT-GLAZE 33K J 1/10W
R9255	401 038 3801	MT-GLAZE 330K J 1/10W
R9256	401 038 2200	MT-GLAZE 27K J 1/10W
R9257	401 037 6803	MT-GLAZE 12K J 1/10W
R9258	401 037 6704	MT-GLAZE 1.2K J 1/10W

Location	Part No.	Description
R9259	401 038 0701	MT-GLAZE 2.2K J 1/10W
R9261	401 037 5400	MT-GLAZE 1K J 1/10W
R9262	401 038 0701	MT-GLAZE 2.2K J 1/10W
R9263	401 037 5400	MT-GLAZE 1K J 1/10W
R9264	401 037 5400	MT-GLAZE 1K J 1/10W
R9265	401 038 2200	MT-GLAZE 27K J 1/10W
R9266	401 038 0800	MT-GLAZE 22K J 1/10W
R9267	401 038 1401	MT-GLAZE 24K J 1/10W
R9269	401 037 7909	MT-GLAZE 1.5K J 1/10W
		(SEMI VARIABLE RESISTORS)
SVR9201	636 000 2951	SEMI VR, 10K OHM
SVR9202	636 000 2913	SEMI VR, 2.2K OHM
SVR9203	636 000 2890	SEMI VR, 1K OHM
SVR9204	636 000 3019	SEMI VR, 100K OHM
SVR9205	636 000 2975	SEMI VR, 22K OHM
SVR9206	636 021 9441	SEMI VR, 22K OHM
		(TRANSFORMERS)
T9201	636 003 4464	HF COIL TRANS
T9202	636 003 4518	HF COIL TRANS
T9203	636 003 4624	HF COIL TRANS
T9204	636 003 4518	HF COIL TRANS

CA-3 CIRCUIT BOARD

Location	Part No.	Description
		(CAPACITORS)
C9301	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9302	403 068 0409	CERAMIC 0.1U Z 25V
C9303	403 068 5107	CERAMIC 0.047U Z 25V
C9304	403 068 5107	CERAMIC 0.047U Z 25V
C9305	403 068 0409	CERAMIC 0.1U Z 25V
C9306	403 068 5107	CERAMIC 0.047U Z 25V
C9307	403 068 5107	CERAMIC 0.047U Z 25V
C9308	403 068 0409	CERAMIC 0.1U Z 25V
C9309	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9311	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9312	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9313	403 020 0409	CERAMIC 27P J 50V
C9314	403 152 9806	ELECT 10U M 16V
C9316	403 068 0409	CERAMIC 0.1U Z 25V
C9317	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9318	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9319	403 068 0409	CERAMIC 0.1U Z 25V
C9321	403 069 5601	CERAMIC 0.01U K 50V
C9322	403 069 5601	CERAMIC 0.01U K 50V
C9324	403 069 5601	CERAMIC 0.01U K 50V
C9326	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9331	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9332	403 068 0409	CERAMIC 0.1U Z 25V
C9333	403 152 9707	ELECT 22U M 6.3V
C9334	403 152 9707	ELECT 22U M 6.3V
C9335	403 068 0409	CERAMIC 0.1U Z 25V
C9336	403 068 0409	CERAMIC 0.1U Z 25V
C9337	403 068 0409	CERAMIC 0.1U Z 25V
C9338	403 068 0409	CERAMIC 0.1U Z 25V
C9339	403 140 5407	TA-SOLID 4.7U M 4V
C9339	403 089 6206	TA-SOLID 4.7U M 4V
C9341	403 068 0409	CERAMIC 0.1U Z 25V
C9342	403 069 5601	CERAMIC 0.01U K 50V
C9343	403 069 5601	CERAMIC 0.01U K 50V
C9363	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9364	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9365	403 105 9402	CERAMIC 10P J 50V
		(DIODES)
D9302	407 008 6209	DIODE MA153-TX
D9303	407 066 7606	DIODE SB007-03CP
D9304	407 066 7606	DIODE SB007-03CP
		(INTEGRATED CIRCUITS)
IC9301	409 140 9902	IC AN2251S-(E1)
IC9302	409 039 8603	IC NJM4560M-T1
IC9303	409 018 4701	IC LA6458M-T1
IC9304	409 018 4701	IC LA6458M-T1
IC9305	409 018 4008	IC LA6393M-T1
IC9306	409 020 8902	IC LC4066BM-T1
		(COILS)
L9301	636 003 2101	HF CHOKE 10UH
L9303	636 003 2101	HF CHOKE 10UH
		(TRANSISTORS)
Q9303	405 015 8704	TR 2SC2812-L6
Q9304	405 027 9607	TR 2SK94-X2
or	405 027 9706	TR 2SK94-X3
Q9305	405 035 1105	TR FMW1-T99
Q9306	405 015 8704	TR 2SC2812-L6
		(RESISTORS)
R9301	401 038 2200	MT-GLAZE 27K J 1/10W
R9302	401 038 6505	MT-GLAZE 47K J 1/10W
R9303	401 037 5400	MT-GLAZE 1K J 1/10W
R9304	401 037 5400	MT-GLAZE 1K J 1/10W
R9305	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9306	401 037 5400	MT-GLAZE 1K J 1/10W
R9307	401 037 5608	MT-GLAZE 10K J 1/10W
R9308	401 038 5300	MT-GLAZE 39K J 1/10W
R9309	401 038 3702	MT-GLAZE 33K J 1/10W
R9311	401 038 0800	MT-GLAZE 22K J 1/10W
R9312	401 037 5400	MT-GLAZE 1K J 1/10W
R9314	401 037 5004	MT-GLAZE 0 Z 1/10W
R9315	401 038 3504	MT-GLAZE 330 J 1/10W
R9319	401 039 0304	MT-GLAZE 820 J 1/10W
R9321	401 037 5400	MT-GLAZE 1K J 1/10W
R9322	401 038 0800	MT-GLAZE 22K J 1/10W
R9323	401 037 5707	MT-GLAZE 100K J 1/10W
R9324	401 037 5707	MT-GLAZE 100K J 1/10W
R9325	401 038 2200	MT-GLAZE 27K J 1/10W
R9326	401 038 6505	MT-GLAZE 47K J 1/10W
R9327	401 038 0800	MT-GLAZE 22K J 1/10W
R9328	401 039 0403	MT-GLAZE 8.2K J 1/10W
R9329	401 038 5300	MT-GLAZE 39K J 1/10W
R9331	401 037 5707	MT-GLAZE 100K J 1/10W
R9332	401 037 5707	MT-GLAZE 100K J 1/10W
R9333	401 037 5400	MT-GLAZE 1K J 1/10W
R9334	401 037 5400	MT-GLAZE 1K J 1/10W
R9335	401 037 9309	MT-GLAZE 18K J 1/10W
R9336	401 038 2200	MT-GLAZE 27K J 1/10W
R9337	401 038 6307	MT-GLAZE 470 J 1/10W
R9338	401 037 5004	MT-GLAZE 0 Z 1/10W
R9341	401 037 6803	MT-GLAZE 12K J 1/10W
R9342	401 037 6803	MT-GLAZE 12K J 1/10W
R9343	401 037 5608	MT-GLAZE 10K J 1/10W
R9344	401 038 3702	MT-GLAZE 33K J 1/10W
R9345	401 037 5707	MT-GLAZE 100K J 1/10W
R9346	401 038 6604	MT-GLAZE 470K J 1/10W
R9347	401 038 3702	MT-GLAZE 33K J 1/10W

Location	Part No.	Description
R9348	401 037 5707	MT-GLAZE 100K J 1/10W
R9349	401 038 6604	MT-GLAZE 470K J 1/10W
R9351	401 038 6604	MT-GLAZE 470K J 1/10W
R9352	401 038 9407	MT-GLAZE 680K J 1/10W
R9353	401 037 8104	MT-GLAZE 150K J 1/10W
R9354	401 037 8104	MT-GLAZE 150K J 1/10W
R9355	401 037 5400	MT-GLAZE 1K J 1/10W
R9356	401 037 5400	MT-GLAZE 1K J 1/10W
R9357	401 037 8104	MT-GLAZE 150K J 1/10W
R9358	401 037 5400	MT-GLAZE 1K J 1/10W
R9359	401 037 5400	MT-GLAZE 1K J 1/10W
R9361	401 037 8104	MT-GLAZE 150K J 1/10W
R9362	401 037 5608	MT-GLAZE 10K J 1/10W
R9363	401 037 5608	MT-GLAZE 10K J 1/10W
R9364	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9366	401 038 7809	MT-GLAZE 56K J 1/10W
R9367	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9368	401 038 7809	MT-GLAZE 56K J 1/10W
R9369	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9372	401 037 5004	MT-GLAZE 0 Z 1/10W
R9373	401 037 5004	MT-GLAZE 0 Z 1/10W
R9374	401 037 8005	MT-GLAZE 15K J 1/10W
R9375	401 038 2200	MT-GLAZE 27K J 1/10W
R9376	401 037 5707	MT-GLAZE 100K J 1/10W
R9377	401 037 5004	MT-GLAZE 0 Z 1/10W
R9378	401 037 5004	MT-GLAZE 0 Z 1/10W
R9379	401 037 5004	MT-GLAZE 0 Z 1/10W
R9381	401 037 5608	MT-GLAZE 10K J 1/10W
R9382	401 038 6406	MT-GLAZE 4.7K J 1/10W
R9383	401 037 5608	MT-GLAZE 10K J 1/10W
R9384	401 037 5004	MT-GLAZE 0 Z 1/10W
R9385	401 037 5004	MT-GLAZE 0 Z 1/10W
		(SEMI VARIABLE RESISTORS)
SVR9301	636 000 2999	SEMI VR, 47K OHM
SVR9302	636 000 2999	SEMI VR, 47K OHM
SVR9303	636 000 2951	SEMI VR, 10K OHM
SVR9304	636 000 2951	SEMI VR, 10K OHM
SVR9305	636 000 2951	SEMI VR, 10K OHM
SVR9306	636 000 2999	SEMI VR, 47K OHM
SVR9307	636 000 2999	SEMI VR, 47K OHM
SVR9311	636 000 2975	SEMI VR, 22K OHM
SVR9312	636 000 2975	SEMI VR, 22K OHM
SVR9313	636 000 2951	SEMI VR, 10K OHM
SVR9314	636 000 2951	SEMI VR, 10K OHM
SVR9315	636 000 3040	SEMI VR, 330K OHM
SVR9316	636 000 3040	SEMI VR, 330K OHM
SVR9317	636 000 2951	SEMI VR, 10K OHM
SVR9318	636 000 2951	SEMI VR, 10K OHM
SVR9319	636 000 2913	SEMI VR, 2.2K OHM
SVR9321	636 000 2975	SEMI VR, 22K OHM
SVR9322	636 000 2951	SEMI VR, 10K OHM
SVR9323	636 000 2951	SEMI VR, 10K OHM
		(TRANSFORMERS)
T9301	636 003 4488	HF COIL TRANS
T9302	636 003 4617	HF COIL TRANS
T9303	636 003 4501	HF COIL TRANS
T9304	636 021 2046	FILTER, 4.43MHZ

CA-4 CIRCUIT BOARD

Location	Part No.	Description
		(CAPACITORS)
C9401	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9402	403 069 5601	CERAMIC 0.01U K 50V
C9403	403 013 5800	CERAMIC 1500P J 50V
C9404	403 013 5800	CERAMIC 1500P J 50V
C9405	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9406	403 140 6404	TA-SOLID 4.7U M 10V
or	403 090 7308	TA-SOLID 4.7U M 10V
C9407	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9408	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9409	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9411	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9412	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9413	403 069 5601	CERAMIC 0.01U K 50V
C9414	403 069 5601	CERAMIC 0.01U K 50V
C9415	403 069 5601	CERAMIC 0.01U K 50V
C9416	403 069 5601	CERAMIC 0.01U K 50V
C9417	403 068 0409	CERAMIC 0.1U Z 25V
C9418	403 140 6305	TA-SOLID 2.2U M 10V
or	403 114 5402	TA-SOLID 2.2U M 10V
C9419	403 068 0409	CERAMIC 0.1U Z 25V
C9421	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9422	403 114 3903	CERAMIC 0.22U Z 50V
C9423	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9426	403 068 0409	CERAMIC 0.1U Z 25V
C9427	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9428	403 022 8205	CERAMIC 33P J 50V
C9429	403 022 8205	CERAMIC 33P J 50V
C9431	403 009 5708	CERAMIC 100P J 50V
C9432	403 009 5708	CERAMIC 100P J 50V
C9433	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9434	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9436	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9437	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9439	403 073 9107	CERAMIC 4700P K 50V
C9441	403 068 0409	CERAMIC 0.1U Z 25V
C9442	403 140 5407	TA-SOLID 4.7U M 4V
or	403 089 6206	TA-SOLID 4.7U M 4V
C9443	403 134 6205	ELECT 470U M 25V
		(DIODES)
D9401	407 008 6209	DIODE MA153-TX
D9402	407 008 6209	DIODE MA153-TX
D9403	407 008 6209	DIODE MA153-TX
D9404	407 004 5602	DIODE DSA015
D9405	407 004 5602	DIODE DSA015
D9406	407 004 5602	DIODE DSA015
D9407	407 004 5602	DIODE DSA015
D9408	407 057 8902	ZENER DIODE RD8.2MB2
D9409	407 057 8902	ZENER DIODE RD8.2MB2
D9411	407 076 3407	ZENER DIODE RD2.4MB
D9412	407 057 8902	ZENER DIODE RD8.2MB2
		(INTEGRATED CIRCUITS)
IC9401	409 111 6008	IC BA225AF-T1
IC9402	409 018 3704	IC LA6358M-T1
IC9403	410 023 8806	IC MB3763PF-G-BND-TF
IC9404	410 044 5006	IC TMP80C50AU-9687
IC9405	409 113 8307	IC LC9111A-098
IC9406	409 111 8200	IC NJM4556MB-T1
IC9407	409 151 6303	IC MSM6219GS-VKR2

Location	Part No.	Description
		(COILS)
L9401	636 003 2149	HF CHOKE 22UH
L9411	636 003 5379	CORE
L9412	636 003 5379	CORE
L9413	636 003 5379	CORE
L9414	636 003 5379	CORE
L9415	636 003 5379	CORE
L9416	636 003 5379	CORE
L9417	636 003 5379	CORE
L9418	636 003 5379	CORE
L9419	636 003 5379	CORE
		(TRANSISTORS)
Q9401	405 015 8704	TR 2SC2812-L6
Q9402	405 015 8704	TR 2SC2812-L6
Q9403	405 060 6809	TR RN2406
Q9404	405 060 6809	TR RN2406
Q9405	405 060 6700	TR RN1406
Q9406	405 060 6700	TR RN1406
Q9408	405 015 8704	TR 2SC2812-L6
Q9409	405 015 8704	TR 2SC2812-L6
Q9411	405 002 6706	TR 2SA1179-M6
Q9412	405 002 6706	TR 2SA1179-M6
Q9413	405 002 6706	TR 2SA1179-M6
Q9416	405 002 6706	TR 2SA1179-M6
Q9417	405 015 8704	TR 2SC2812-L6
Q9418	405 018 2006	TR 2SC3396
		(RESISTORS)
R9401	401 038 0701	MT-GLAZE 2.2K J 1/10W
R9402	401 038 7205	MT-GLAZE 5.1K J 1/10W
R9403	401 038 3801	MT-GLAZE 330K J 1/10W
R9404	401 037 8005	MT-GLAZE 15K J 1/10W
R9405	401 038 6604	MT-GLAZE 470K J 1/10W
R9406	401 038 0909	MT-GLAZE 220K J 1/10W
R9407	401 038 5300	MT-GLAZE 39K J 1/10W
R9408	401 038 5300	MT-GLAZE 39K J 1/10W
R9409	401 037 9200	MT-GLAZE 1.8K J 1/10W
R9411	401 037 5103	MT-GLAZE 10 J 1/10W
R9412	401 037 5608	MT-GLAZE 10K J 1/10W
R9413	401 039 0403	MT-GLAZE 8.2K J 1/10W
R9414	401 038 0800	MT-GLAZE 22K J 1/10W
R9415	401 038 0800	MT-GLAZE 22K J 1/10W
R9416	401 038 0800	MT-GLAZE 22K J 1/10W
R9417	401 038 0800	MT-GLAZE 22K J 1/10W
R9419	401 038 0800	MT-GLAZE 22K J 1/10W
R9421	401 037 5608	MT-GLAZE 10K J 1/10W
R9422	401 038 0800	MT-GLAZE 22K J 1/10W
R9423	401 037 5400	MT-GLAZE 1K J 1/10W
R9424	401 037 5004	MT-GLAZE 0 Z 1/10W
R9425	401 038 0909	MT-GLAZE 220K J 1/10W
R9426	401 038 9308	MT-GLAZE 68K J 1/10W
R9432	401 037 9309	MT-GLAZE 18K J 1/10W
R9433	401 037 6803	MT-GLAZE 12K J 1/10W
R9434	401 039 0403	MT-GLAZE 8.2K J 1/10W
R9435	401 038 7908	MT-GLAZE 560K J 1/10W
R9436	401 038 0701	MT-GLAZE 2.2K J 1/10W
R9437	401 037 6605	MT-GLAZE 120 J 1/10W
R9438	401 038 7601	MT-GLAZE 560 J 1/10W
R9439	401 037 5608	MT-GLAZE 10K J 1/10W
R9441	401 037 5400	MT-GLAZE 1K J 1/10W
R9442	401 038 3801	MT-GLAZE 330K J 1/10W
R9443	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9444	401 037 8104	MT-GLAZE 150K J 1/10W
R9445	401 037 5004	MT-GLAZE 0 Z 1/10W
R9446	401 037 5400	MT-GLAZE 1K J 1/10W
R9447	401 037 7909	MT-GLAZE 1.5K J 1/10W
R9451	401 038 9209	MT-GLAZE 6.8K J 1/10W
R9452	401 038 9001	MT-GLAZE 680 J 1/10W
R9453	401 037 9309	MT-GLAZE 18K J 1/10W
R9454	401 037 7909	MT-GLAZE 1.5K J 1/10W
R9455	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9457	401 038 5102	MT-GLAZE 3.9K J 1/10W
R9458	401 037 5608	MT-GLAZE 10K J 1/10W
R9459	401 038 7205	MT-GLAZE 5.1K J 1/10W
R9461	401 038 5102	MT-GLAZE 3.9K J 1/10W
R9462	401 037 5608	MT-GLAZE 10K J 1/10W
R9463	401 038 7205	MT-GLAZE 5.1K J 1/10W
R9464	401 037 5608	MT-GLAZE 10K J 1/10W
R9465	401 037 5608	MT-GLAZE 10K J 1/10W
R9468	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9469	401 037 5608	MT-GLAZE 10K J 1/10W
R9471	401 038 7601	MT-GLAZE 560 J 1/10W
R9472	401 037 9200	MT-GLAZE 1.8K J 1/10W
R9478	401 038 0800	MT-GLAZE 22K J 1/10W
R9482	401 037 5004	MT-GLAZE 0 Z 1/10W
R9484	401 038 0800	MT-GLAZE 22K J 1/10W
R9485	401 037 5004	MT-GLAZE 0 Z 1/10W
R9486	401 037 5004	MT-GLAZE 0 Z 1/10W
		(SEMI VARIABLE RESISTORS)
SVR9401	636 000 2937	SEMI VR, 4.7K OHM
		(SWITCHES)
S9401	636 000 8366	SLIDE SWITCH
S9402	636 000 8366	SLIDE SWITCH
S9403	636 000 8489	PUSH SWITCH
		(TRANSFORMERS)
T9401	636 003 4600	HF COIL TRANS
		(MISCELLANEOUS)
A9401	⚠ 636 000 0148	DC/DC CONVERTER
or	⚠ 636 000 0162	DC/DC CONVERTER

VF-1 CIRCUIT BOARD

Location	Part No.	Description
		(CAPACITORS)
C9901	403 153 0901	ELECT 100U M 6.3V
C9902	403 150 0102	CERAMIC 1800P J 50V
C9903	403 152 9806	ELECT 10U M 16V
C9904	403 070 9803	CERAMIC 0.015U K 50V
C9905	403 134 7400	CERAMIC 1U Z 16V
C9906	403 018 7403	CERAMIC 220P J 50V
C9907	403 090 6509	TA-SOLID 33U M 10V
C9908	403 152 9509	ELECT 33U M 4V
C9909	403 152 9509	ELECT 33U M 4V
C9910	403 091 6706	TA-SOLID 0.68U M 20V
C9911	403 152 9806	ELECT 10U M 16V
C9914	403 030 6903	CERAMIC 68P J 50V
C9915	403 114 3903	CERAMIC 0.22U Z 50V
C9916	403 149 8300	CERAMIC 2700P J 100V
C9917	403 153 1205	ELECT 47U M 16V
C9918	403 051 8009	ELECT 10U M 63V
C9919	403 090 6509	TA-SOLID 33U M 10V
C9920	403 153 0901	ELECT 100U M 6.3V
C9922	403 149 8102	CERAMIC 0.033U K 100V
C9923	⚠ 403 076 6707	CERAMIC 1000P K 1K
C9924	⚠ 403 076 6707	CERAMIC 1000P K 1K
C9925	403 075 2205	CERAMIC 0.068U K 50V
C9926	403 075 2205	CERAMIC 0.068U K 50V
		(DIODES)
D9901	407 008 5707	DIODE MA152K-TX
D9902	407 004 5602	DIODE DSA015
D9903	⚠ 407 101 3402	DIODE 1SS221-T1B
D9904	⚠ 407 101 3303	DIODE ESJ04-02

Location	Part No.	Description
		(INTEGRATED CIRCUITS)
IC9901	409 000 6409	IC AN2510S-T1
		(COILS)
L9901	⚠ 636 002 8906	HF CHOKE 100UH
L9902	⚠ 636 021 3432	COIL,LINEARITY
L9904	636 003 2040	HF CHOKE 3.3UH
		(TRANSISTORS)
Q9901	405 043 8806	TR 2SA1257-G4
or	405 043 8905	TR 2SA1257-G5
Q9902	⚠ 405 078 8406	TR 2SD968A-Q(TX)
or	⚠ 405 068 8505	TR 2SD968A-R(TX)
or	405 084 0203	TR 2SD968A-S(TX)
or	405 084 7301	TR 2SD968-S(TX)
or	405 084 7400	TR 2SD968-Q(TX)
or	405 084 7509	TR 2SD968-R(TX)
		(RESISTORS)
R9901	401 038 7601	MT-GLAZE 560 J 1/10W
R9902	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9903	401 038 0701	MT-GLAZE 2.2K J 1/10W
R9904	401 038 9308	MT-GLAZE 68K J 1/10W
R9905	401 037 7800	MT-GLAZE 150 J 1/10W
R9906	401 037 5400	MT-GLAZE 1K J 1/10W
R9907	401 038 5607	MT-GLAZE 4.7 K 1/10W
R9908	401 037 7800	MT-GLAZE 150 J 1/10W
R9909	401 038 9209	MT-GLAZE 6.8K J 1/10W
R9910	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9911	401 037 9200	MT-GLAZE 1.8K J 1/10W
R9915	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9916	401 038 3603	MT-GLAZE 3.3K J 1/10W
R9918	401 038 2408	MT-GLAZE 2.7M J 1/10W
R9920	401 038 0701	MT-GLAZE 2.2K J 1/10W
R9921	401 035 8403	MT-GLAZE 1.5M J 1/8W
R9922	401 035 8403	MT-GLAZE 1.5M J 1/8W
R9923	401 035 5709	MT-GLAZE 1M J 1/8W
R9924	⚠ 401 037 9408	MT-GLAZE 180K J 1/10W
R9925	401 037 8203	MT-GLAZE 1.5M J 1/10W
R9931	401 037 9200	MT-GLAZE 1.8K J 1/10W
R9933	401 038 7700	MT-GLAZE 5.6K J 1/10W
R9934	401 037 5103	MT-GLAZE 10 J 1/10W
		(SEMI VARIABLE RESISTORS)
SVR9901	636 000 2913	SEMI VR, 2.2K OHM
SVR9902	636 000 2852	SEMI VR, 220 OHM
SVR9903	636 000 2975	SEMI VR, 22K OHM
SVR9904	636 000 3910	VR, 33 OHM
SVR9905	636 000 3958	1.5M OHM
		(TRANSFORMERS)
T9901	⚠ 636 021 3418	TRANS,FLYBACK
		(MISCELLANEOUS)
CN9903	⚠ 636 002 7619	CORD
TH9901	407 014 9003	THERMISTOR SDT-02

TC-3 CIRCUIT BOARD

Location	Part No.	Description
	636 013 8803	SHIELD PLATE
		(CAPACITORS)
C2101	403 067 9304	CERAMIC 0.01U K 25V
C2103	403 073 4508	CERAMIC 0.039U K 50V
C2104	403 092 6606	TA-SOLID 0.22U M 35V
C2105	403 028 4102	CERAMIC 56P J 50V
C2106	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C2107	403 014 9203	CERAMIC 180P J 50V
C2108	403 152 9608	ELECT 47U M 4V
C2109	403 153 0901	ELECT 100U M 6.3V
C2110	403 033 9000	CERAMIC 820P J 50V
C2111	403 026 7600	CERAMIC 470P J 50V
C2112	403 026 7600	CERAMIC 470P J 50V
C2113	403 014 9203	CERAMIC 180P J 50V
C9601	403 140 5902	TA-SOLID 3.3U M 6.3V
or	403 114 5600	TA-SOLID 3.3U M 6.3V
C9602	403 140 6602	TA-SOLID 1U M 16V
or	403 091 0407	TA-SOLID 1U M 16V
C9603	403 010 1102	CERAMIC 1000P J 50V
C9604	403 010 1102	CERAMIC 1000P J 50V
		(DIODES)
D2101	407 057 8902	ZENER DIODE RD8.2MB2
D2102	407 057 8902	ZENER DIODE RD8.2MB2
D9601	636 000 0339	WHITE SENSOR
		(INTEGRATED CIRCUITS)
IC9601	409 145 7705	IC NJM062MB(T1)
		(TRANSISTORS)
Q2101	405 074 0701	TR IMX2-109
Q2103	405 015 4409	TR 2SC2712-LL
Q9602	406 004 2703	TR 2SC3064-G-6B-TH
		(RESISTORS)
R2101	401 038 0701	MT-GLAZE 2.2K J 1/10W
R2102	401 038 7809	MT-GLAZE 56K J 1/10W
R2103	401 038 2200	MT-GLAZE 27K J 1/10W
R2104	401 038 3603	MT-GLAZE 3.3K J 1/10W
R2105	401 038 0602	MT-GLAZE 220 J 1/10W
R2106	401 037 6803	MT-GLAZE 12K J 1/10W
R2107	401 038 3504	MT-GLAZE 330 J 1/10W
R2109	401 037 5400	MT-GLAZE 1K J 1/10W
R2110	401 037 6803	MT-GLAZE 12K J 1/10W
R2111	401 038 0800	MT-GLAZE 22K J 1/10W
R2112	401 038 0800	MT-GLAZE 22K J 1/10W
R2113	401 037 5608	MT-GLAZE 10K J 1/10W
R2114	401 038 2101	MT-GLAZE 2.7K J 1/10W

SCHEMATIC DIAGRAM & PRINTED WIRING BOARD

MODEL VM-D3P (SANYO)
FVC-P701 (FISHER)

CONTENTS

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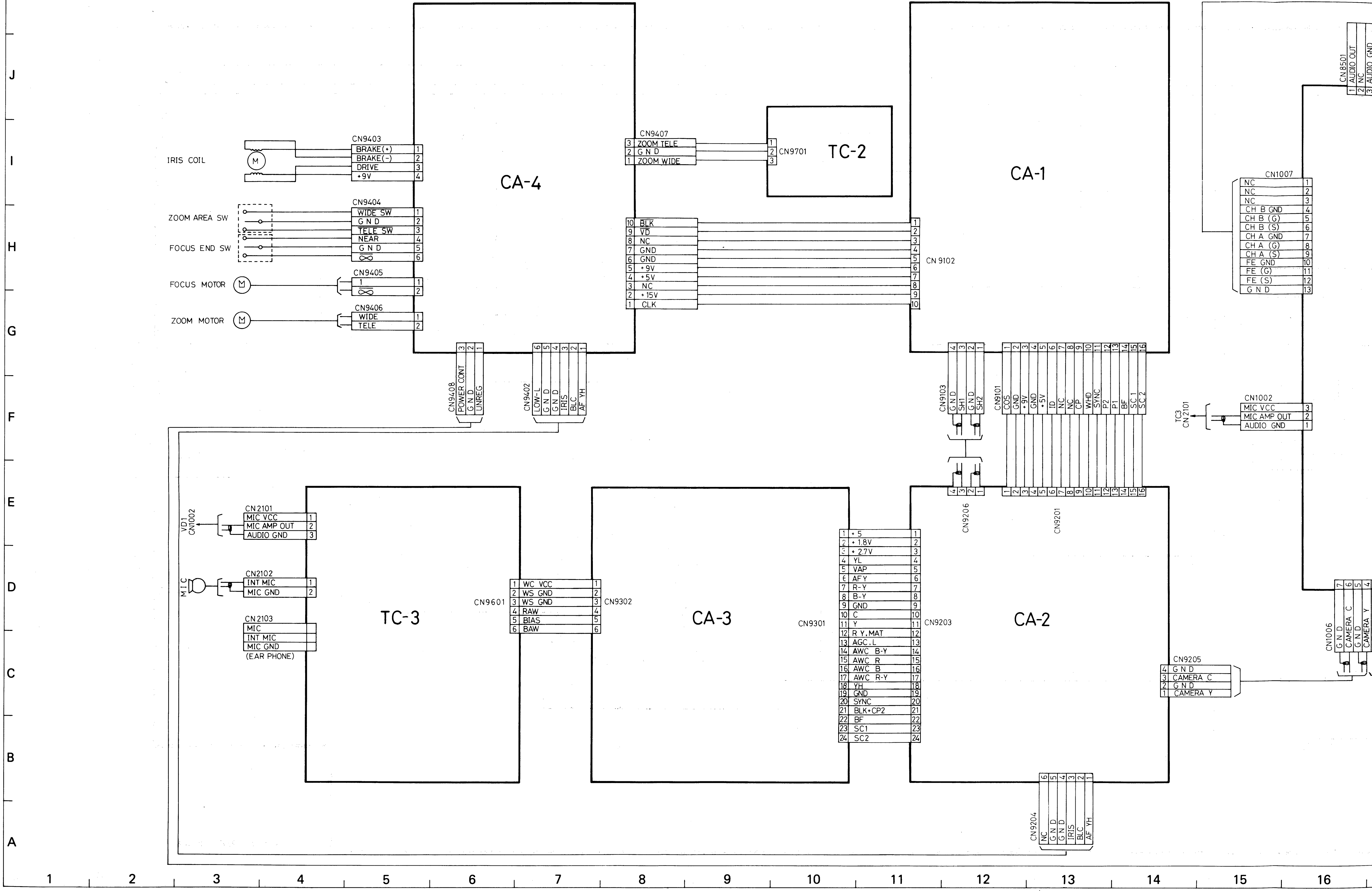
P.C.B. VF-1
P.C.B. TC-3 Ⓕ
P.C.B. TB-1
P.C.B. PW-1 Ⓖ
P.C.B. VD-1 Ⓗ Ⓘ
P.C.B. SV-1 Ⓙ
P.C.B. SY-1 Ⓚ
P.C.B. SY-2 Ⓛ
SEMICONDUCTORS Ⓜ

- ——: +B bus.
- Voltage values: Relative to ground, measured with a DC digital multimeter
- The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.
- All resistors are in ohms.
- All capacitors are in μF (p: pF).
- All coils are in mH (μ: μH).
- Cautions

  Pattern face side (Solder Side) : Parts on the pattern face side seen from the pattern face are indicated.

  Parts face side (Component Side) : Parts on the parts face side seen from the pattern face are indicated.

OVERALL WIRING DIAGRAM


K
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CA-4
CA-1
TC-2
TC-3
CA-3
CA-2
IRIS COIL
M
CN9403
BRAKE(+) 1
BRAKE(-) 2
DRIVE 3
+9V 4
ZOOM AREA SW
FOCUS END SW
CN9404
WIDE SW 1
G N D 2
TELE SW 3
NEAR 4
G N D 5
∞ 6
FOCUS MOTOR
CN9405
1 1
∞ 2
ZOOM MOTOR
CN9406
WIDE 1
TELE 2
CN9407
3 ZOOM TELE
2 G N D
1 ZOOM WIDE
CN9701
10 BLK
9 VD
8 NC
7 GND
6 GND
5 +9V
4 +5V
3 NC
2 +15V
1 CLK
CN 9102
CN9408
POWER CONT 3
G N D 2
UNREG 1
CN9402
LOW-L 6
G N D 5
G N D 4
IRIS 3
BLC 2
AF YH 1
CN9103
G N D 4
SH1 3
G N D 2
SH2 1
CN9101
COS 1
GND 2
+9V 3
GND 4
+5V 5
ID 6
NC 7
NC 8
CP 9
WHD 10
SYNC 11
P2 12
P1 13
BF 14
SC 1 15
SC 2 16
CN9206
CN9201
CN8501
1 AUDIO OUT
2 NC
3 AUDIO GND
CN1007
NC 1
NC 2
NC 3
CH B GND 4
CH B (G) 5
CH B (S) 6
CH A GND 7
CH A (G) 8
CH A (S) 9
FE GND 10
FE (G) 11
FE (S) 12
G N D 13
TC3 CN2101
CN1002
MIC VCC 3
MIC AMP OUT 2
AUDIO GND 1
VD1 CN1002
CN2101
MIC VCC 1
MIC AMP OUT 2
AUDIO GND 3
MIC
CN2102
INT MIC 1
MIC GND 2
CN2103
MIC
INT MIC
MIC GND
(EAR PHONE)
CN9601
1 WC VCC
2 WS GND
3 WS GND
4 RAW
5 BIAS
6 BAW
CN9302
CN9301
1 +5
2 +1.8V
3 +2.7V
4 YL
5 VAP
6 AFY
7 R-Y
8 B-Y
9 GND
10 C
11 Y
12 R Y.MAT
13 AGC.L
14 AWC B-Y
15 AWC R
16 AWC B
17 AWC R-Y
18 YH
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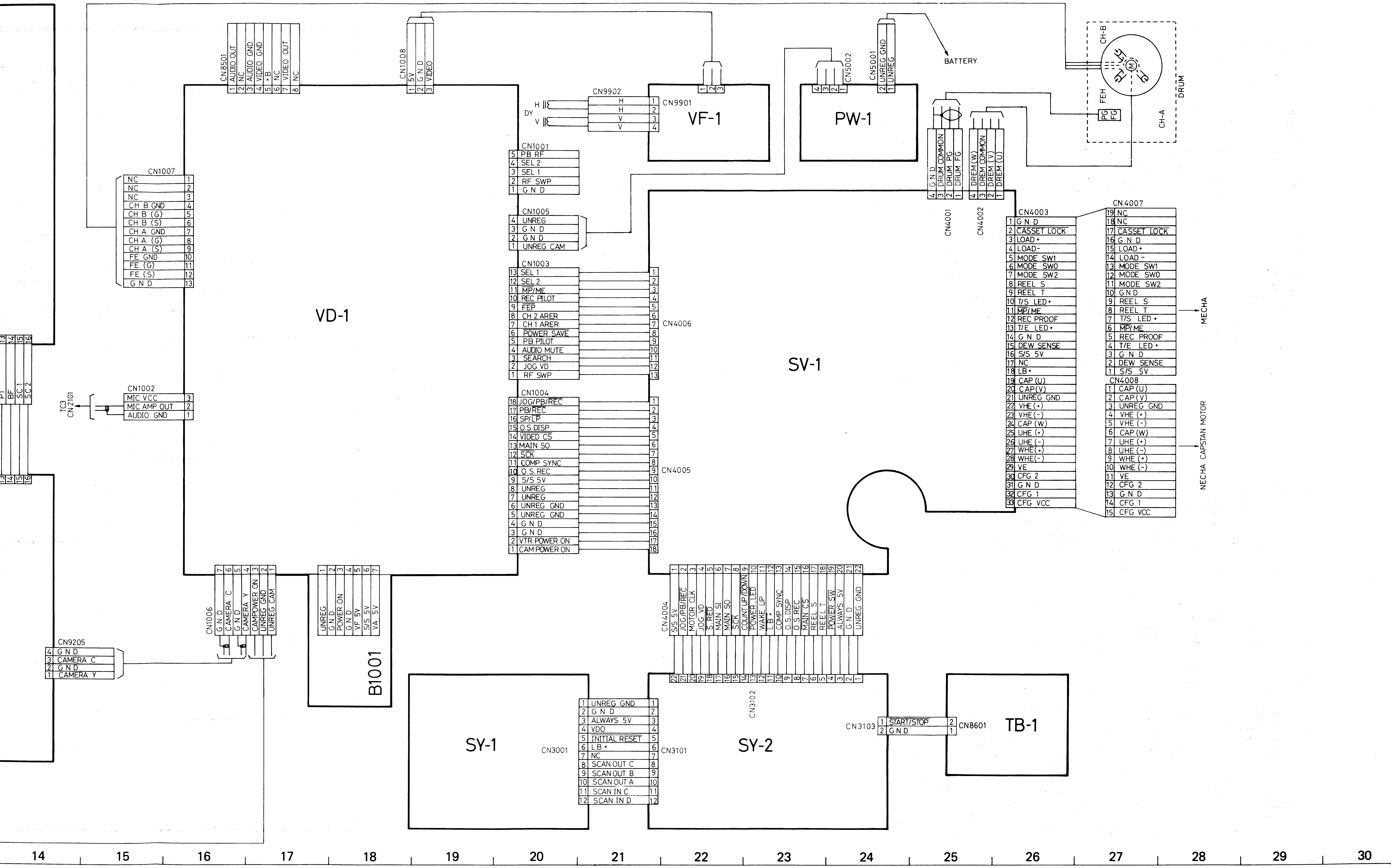
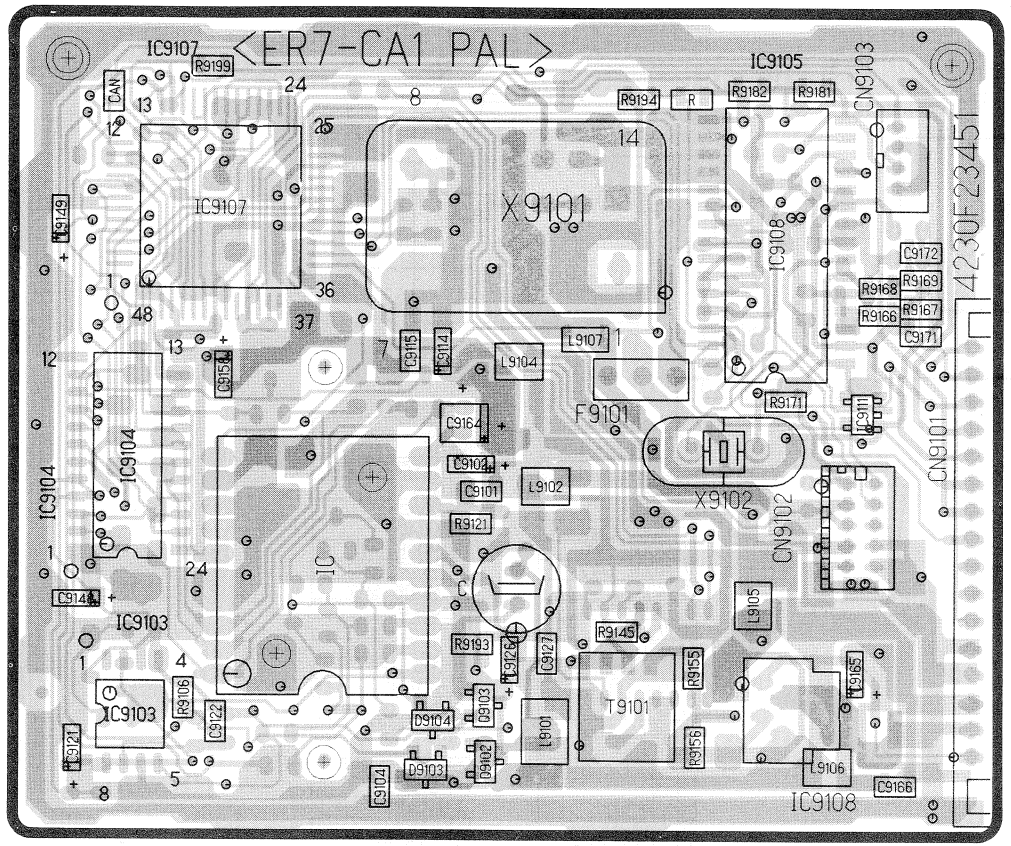
20 SYNC
21 BLK+CP2
22 BF
23 SC1
24 SC2
CN9203
CN9205
4 G N D
3 CAMERA C
2 G N D
1 CAMERA Y
CN1006
G N D 7
CAMERA C 6
G N D 5
CAMERA Y 4
CN9204
NC 6
G N D 5
G N D 4
IRIS 3
BLC 2
AF YH 1

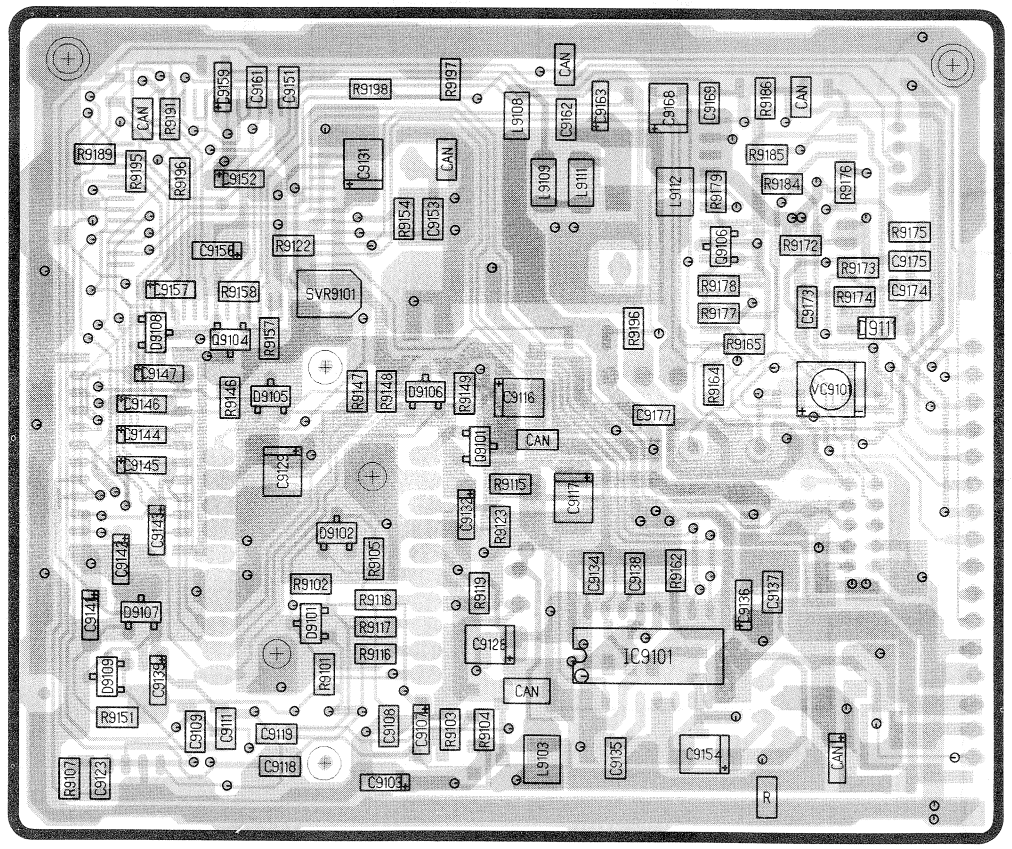
OVERALL WIRING DIAGRAM


VD-1
SV-1
VF-1
PW-1
SY-1
SY-2
TB-1
B1001
BATTERY
DRUM
CH-B
CH-A
FEH
PG
FG
DY
H
V
MECHA
NECHA CAPSTAN MOTOR
CN8501: 1 AUDIO OUT, 2 NC, 3 AUDIO GND, 4 VIDEO GND, 5 •B, 6 NC, 7 VIDEO OUT, 8 NC
CN1008: 1 5V, 2 GND, 3 VIDEO
CN9902: H, H, V, V
CN9901: 1, 2, 3, 4
CN5002: 4, 3, 2, 1
CN5001: 2 UNREG GND, 1 UNREG
CN4001: 4 GND, 3 DRUM COMMON, 2 DRUM PG, 1 DRUM FG
CN4002: 4 DREM (W), 3 DREM COMMON, 2 DREM (V), 1 DREM (U)
CN1007: NC 1, NC 2, NC 3, CH B GND 4, CH B (G) 5, CH B (S) 6, CH A GND 7, CH A (G) 8, CH A (S) 9, FE GND 10, FE (G) 11, FE (S) 12, GND 13
CN1001: 5 PB RF, 4 SEL 2, 3 SEL 1, 2 RF SWP, 1 GND
CN1005: 4 UNREG, 3 GND, 2 GND, 1 UNREG CAM
CN1003: 13 SEL 1, 12 SEL 2, 11 MP/ME, 10 REC PILOT, 9 FEP, 8 CH 2 ARER, 7 CH 1 ARER, 6 POWER SAVE, 5 PB PILOT, 4 AUDIO MUTE, 3 SEARCH, 2 JOG VD, 1 RF SWP
CN4006: 1–13
CN1004: 18 JOG/PB/REC, 17 PB/REC, 16 SP/LP, 15 O.S.DISP, 14 VIDED CS, 13 MAIN SO, 12 SCK, 11 COMP SYNC, 10 O.S.REC, 9 S/S 5V, 8 UNREG, 7 UNREG, 6 UNREG GND, 5 UNREG GND, 4 GND, 3 GND, 2 VTR POWER ON, 1 CAM POWER ON
CN4005: 1–18
CN1002: MIC VCC 3, MIC AMP OUT 2, AUDIO GND 1
TC3 CN2101
13 14 15 16
P1 BF SC1 SC2
14 15 16
CN1006: 7 GND, 6 CAMERA C, 5 GND, 4 CAMERA Y, 3 CAMPOWER ON, 2 UNREG GND, 1 UNREG CAM
1 UNREG, 2 GND, 3 POWER ON, 4 GND, 5 VF 5V, 6 S/S 5V, 7 VA 5V
CN9205: 4 GND, 3 CAMERA C, 2 GND, 1 CAMERA Y
CN4004: 1 S/S 5V, 2 JOG/PB/REC, 3 MOTOR CLK, 4 JOG VD, 5 S.RED, 6 MAIN SI, 7 MAIN SO, 8 SCK, 9 COUNT UP/DOWN, 10 POWER LED, 11 WAKE UP, 12 LB+, 13 COMP SYNC, 14 O.S.DISP, 15 O.S.REC, 16 MAIN CS, 17 REEL S, 18 REEL T, 19 POWER SW, 20 ALWAYS 5V, 21 GND, 22 UNREG GND
CN3102: 22–1
CN4003: 1 GND, 2 CASSET LOCK, 3 LOAD+, 4 LOAD-, 5 MODE SW1, 6 MODE SW0, 7 MODE SW2, 8 REEL S, 9 REEL T, 10 T/S LED+, 11 MP/ME, 12 REC PROOF, 13 T/E LED+, 14 GND, 15 DEW SENSE, 16 S/S 5V, 17 NC, 18 LB+, 19 CAP (U), 20 CAP(V), 21 UNREG GND, 22 VHE (+), 23 VHE (-), 24 CAP (W), 25 UHE (+), 26 UHE (-), 27 WHE (+), 28 WHE (-), 29 VE, 30 CFG 2, 31 GND, 32 CFG 1, 33 CFG VCC
CN4007: 19 NC, 18 NC, 17 CASSET LOCK, 16 GND, 15 LOAD+, 14 LOAD-, 13 MODE SW1, 12 MODE SW0, 11 MODE SW2, 10 GND, 9 REEL S, 8 REEL T, 7 T/S LED+, 6 MP/ME, 5 REC PROOF, 4 T/E LED+, 3 GND, 2 DEW SENSE, 1 S/S 5V
CN4008: 1 CAP (U), 2 CAP (V), 3 UNREG GND, 4 VHE (+), 5 VHE (-), 6 CAP (W), 7 UHE (+), 8 UHE (-), 9 WHE (+), 10 WHE (-), 11 VE, 12 CFG 2, 13 GND, 14 CFG 1, 15 CFG VCC
CN3001
CN3101: 1 UNREG GND, 2 GND, 3 ALWAYS 5V, 4 VDO, 5 INITIAL RESET, 6 LB+, 7 NC, 8 SCAN OUT C, 9 SCAN OUT B, 10 SCAN OUT A, 11 SCAN IN C, 12 SCAN IN D
CN3103: 1 START/STOP, 2 GND
CN8601: 2, 1
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

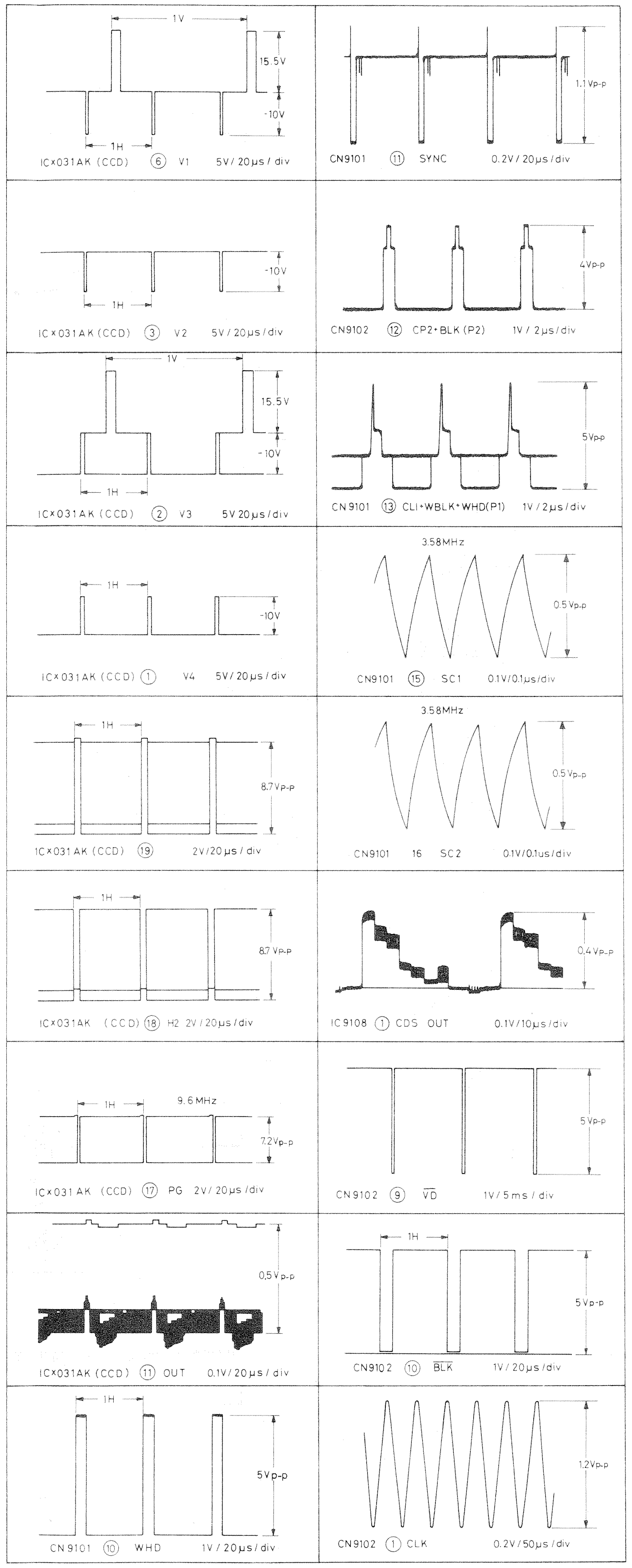
CA-1 BOARD SIDE A

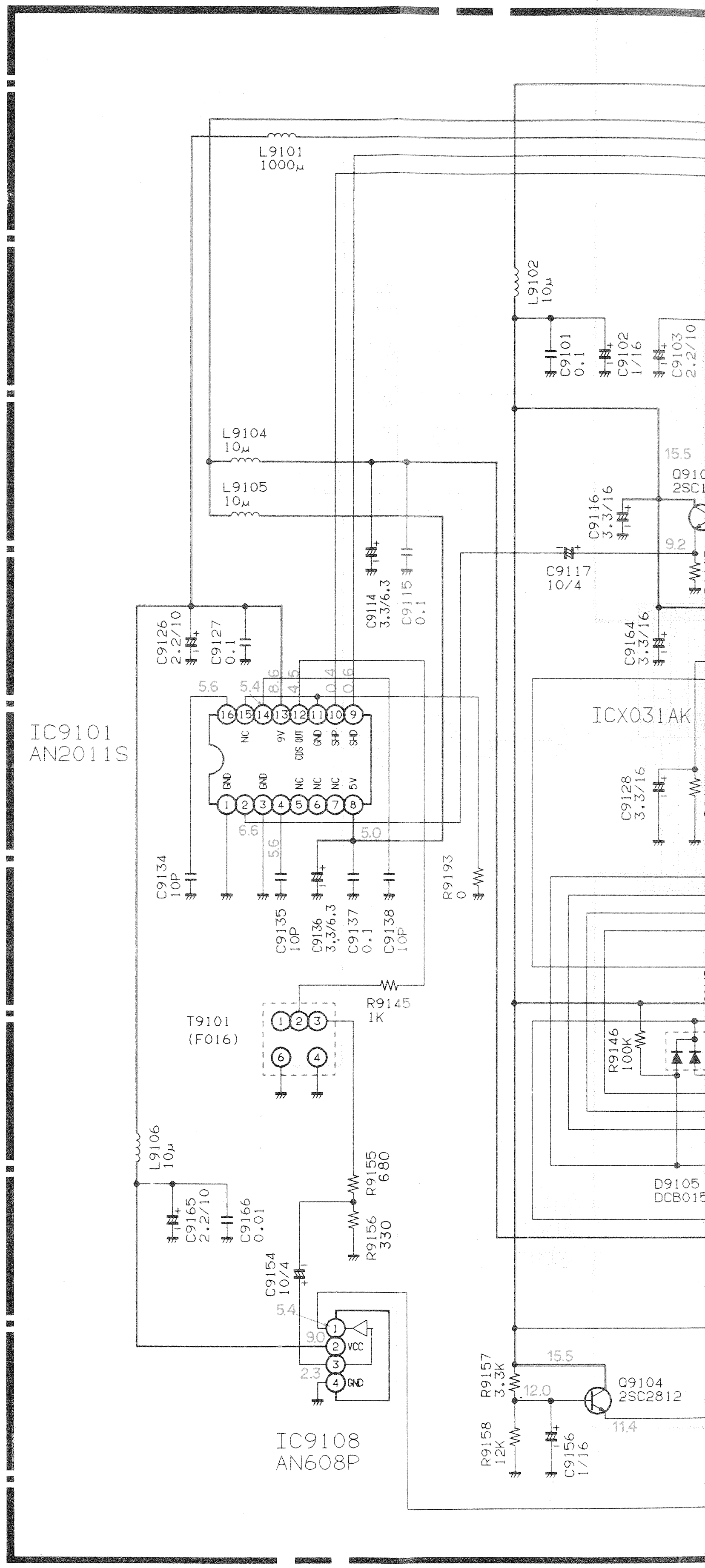

<ER7-CA1 PAL>
4230F23451
IC9107
IC9105
IC9104
IC9103
IC9108
X9101
X9102
F9101
T9101
CN9101
CN9102
CN9103

CA-1 BOARD SIDE B

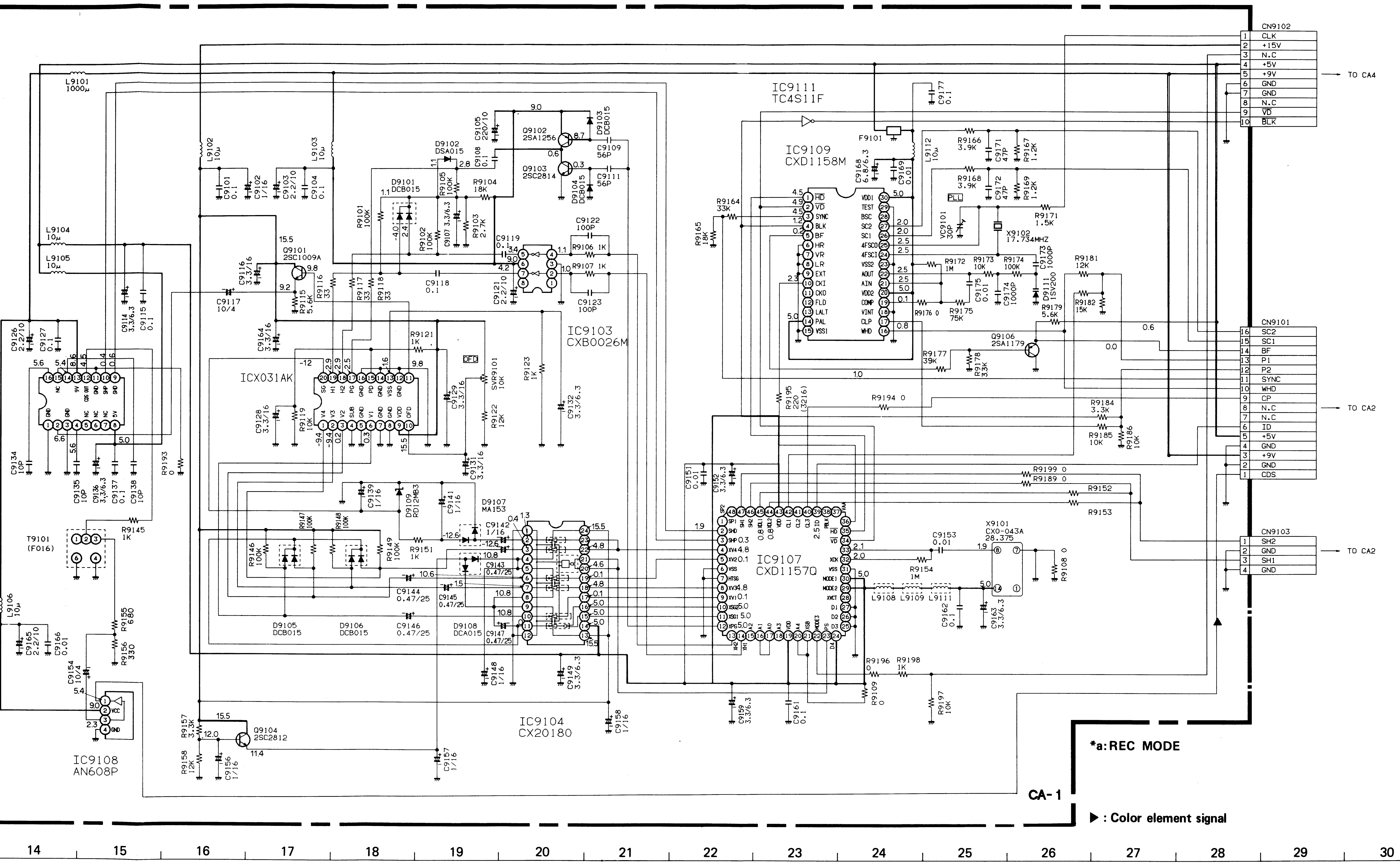

IC9101
SVR9101
VC9101
CAN

CA-1 BOARD (CAMERA)




L9101
1000μ
L9102
10μ
C9101
0.1
C9102
1/16
C9103
2.2/10
L9104
10μ
L9105
10μ
C9116
3.3/16
C9117
10/4
C9114
3.3/6.3
C9115
0.1
C9164
3.3/16
C9126
2.2/10
C9127
0.1
IC9101
AN2011S
ICX031AK
C9128
3.3/16
C9134
10P
C9135
10P
C9136
3.3/6.3
C9137
0.1
C9138
10P
R9193
0
R9145
1K
T9101
(F016)
R9146
100K
L9106
10μ
C9165
2.2/10
C9166
0.01
R9155
680
R9156
330
C9154
10/4
IC9108
AN608P
VCC
GND
D9105
R9157
3.3K
R9158
12K
C9156
1/16
Q9104
2SC2812
15.5
9.2
12.0
11.4
5.4
9.0
2.3
5.6
8.6
4.5
0.4
0.6
6.6
5.0

CA-1 CIRCUIT


CN9102
1 CLK
2 +15V
3 N.C
4 +5V
5 +9V
6 GND
7 GND
8 N.C
9 VD
10 BLK
TO CA4
CN9101
16 SC2
15 SC1
14 BF
13 P1
12 P2
11 SYNC
10 WHD
9 CP
8 N.C
7 N.C
6 ID
5 +5V
4 GND
3 +9V
2 GND
1 CDS
TO CA2
CN9103
1 SH2
2 GND
3 SH1
4 GND
TO CA2
IC9111 TC4S11F
IC9109 CXD1158M
IC9103 CXB0026M
ICX031AK
IC9107 CXD1157Q
IC9104 CX20180
IC9108 AN608P
Q9101 2SC1009A
Q9102 2SA1256
Q9103 2SC2814
Q9104 2SC2812
Q9106 2SA1179
X9101 CX0-043A 28.375
X9102 17.734MHZ
L9101 1000μ
L9102 10μ
L9103 10μ
L9104 10μ
L9105 10μ
L9106 10μ
L9112 10μ
F9101
T9101 (F016)
D9101 DCB015
D9102 DSA015
D9103 DCB015
D9104 DCB015
D9105 DCB015
D9106 DCB015
D9107 MA153
D9108 DCA015
D9109 RD12MB3
D9111 1SV200
VC9101 30P
SVR9101 10K
OFD
PLL
CA-1
14
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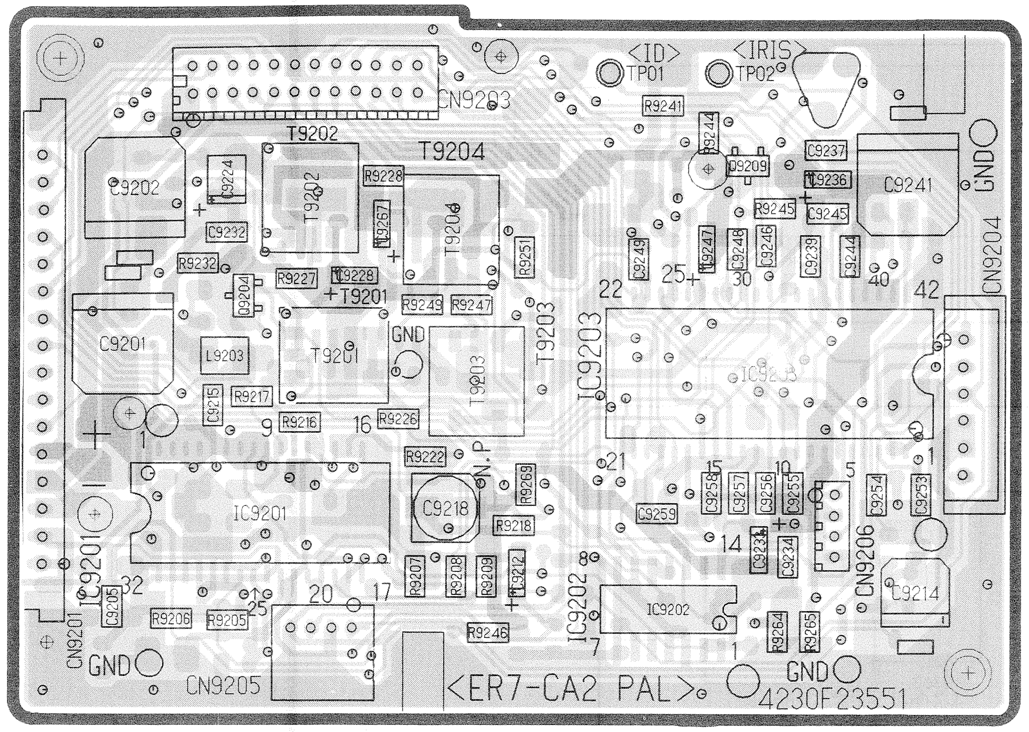
***a: REC MODE**

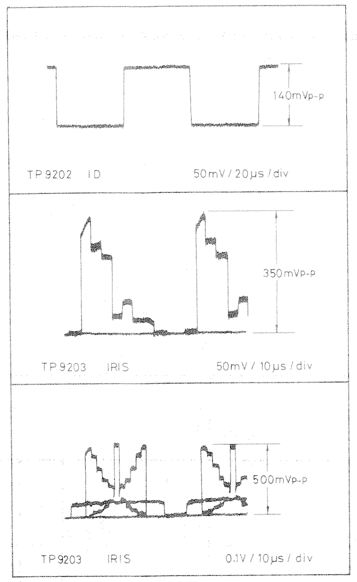
▶ : Color element signal

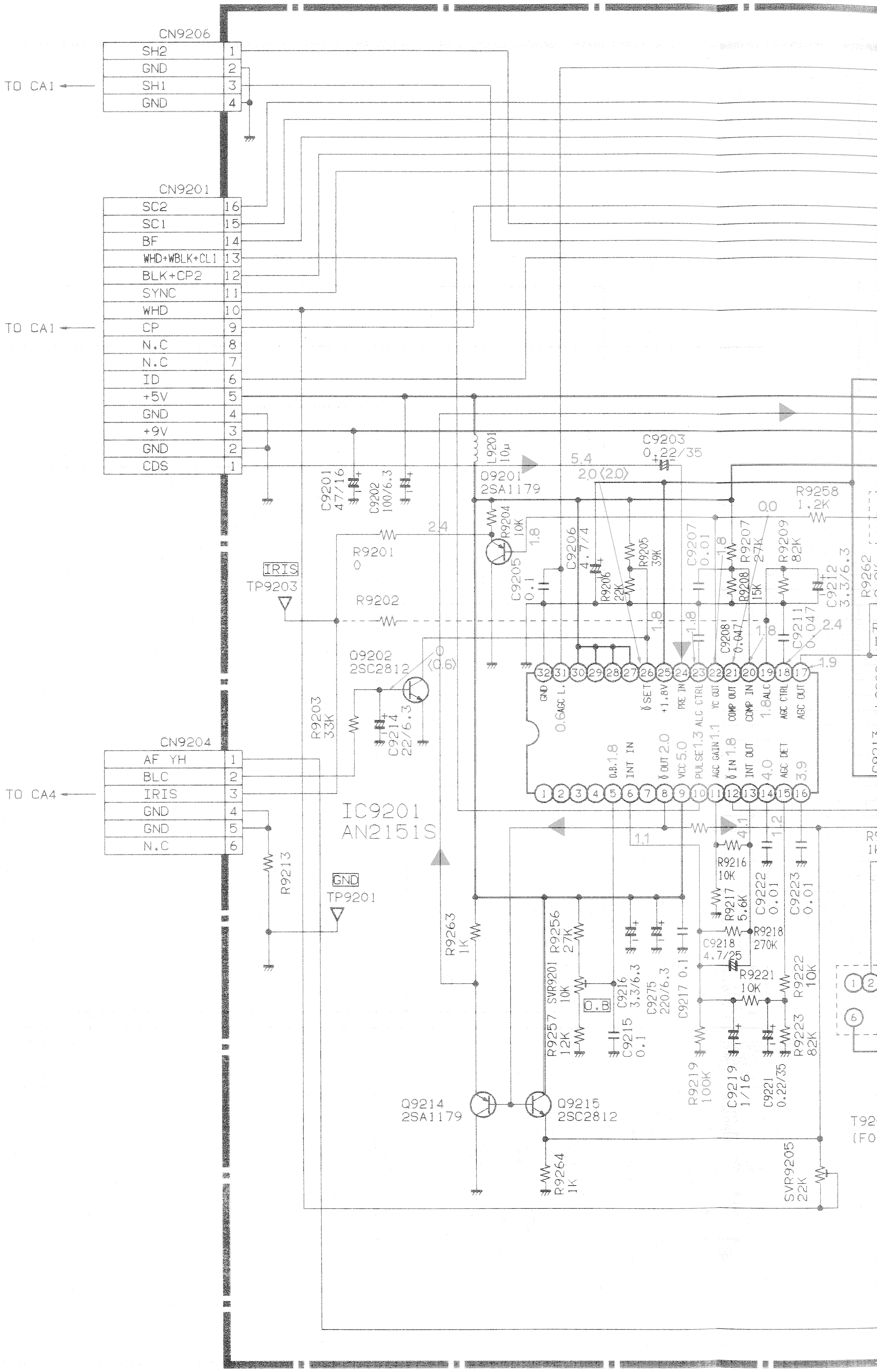
CA-2 BOARD SIDE A



CN9203
<ID>
<IRIS>
TP01
TP02
T9202
T9204
C9202
C9241
GND
CN9204
T9201
T9203
IC9203
IC9201
IC9202
C9218
CN9206
C9214
C9201
CN9205
CN9201
GND
<ER7-CA2 PAL>
4230F23551

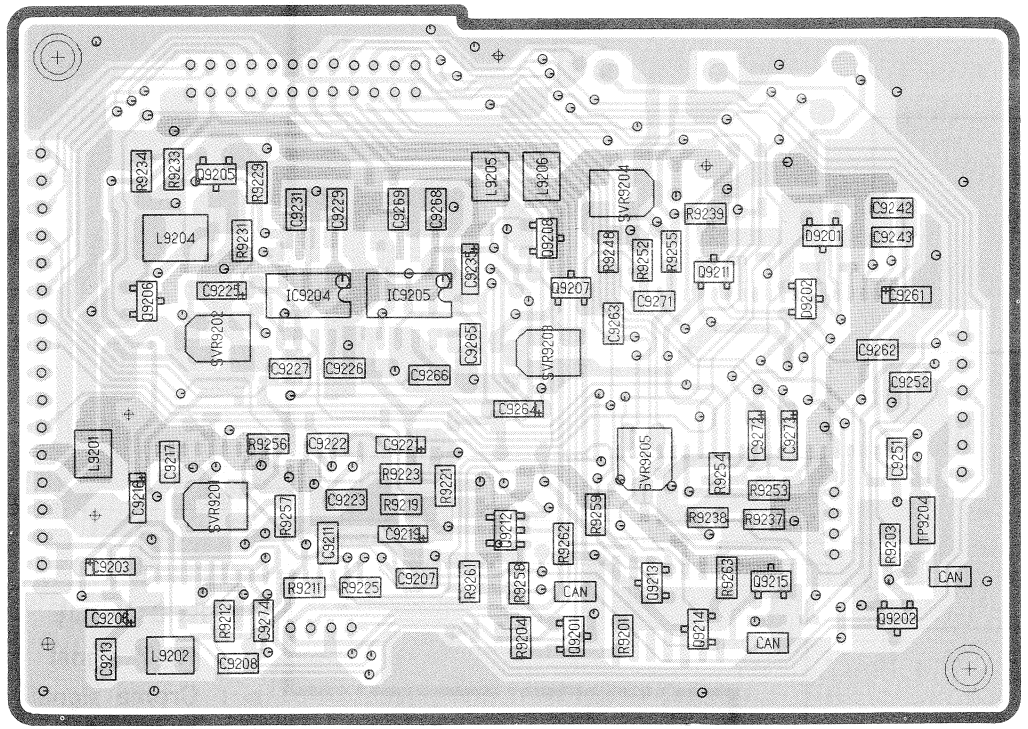
CA-2 BOARD (CAMERA)





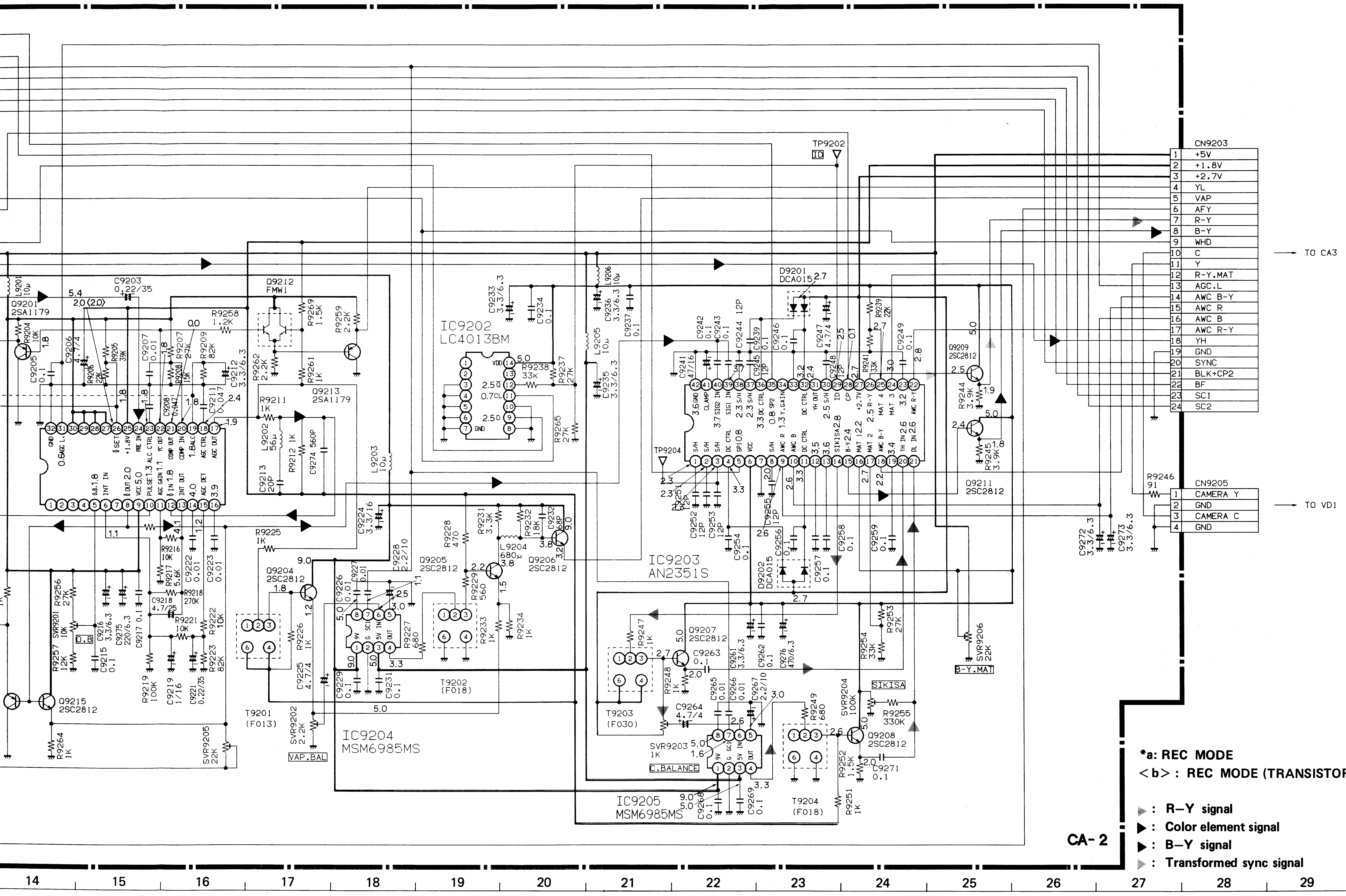
CN9206
SH2
GND
SH1
GND
TO CA1
CN9201
SC2
SC1
BF
WHD+WBLK+CL1
BLK+CP2
SYNC
WHD
CP
N.C
N.C
ID
+5V
GND
+9V
GND
CDS
TO CA1
CN9204
AF YH
BLC
IRIS
GND
GND
N.C
TO CA4
IRIS
TP9203
GND
TP9201
IC9201
AN2151S
Q9201
2SA1179
Q9202
2SC2812
Q9214
2SA1179
Q9215
2SC2812
L9201
10μ
C9201
47/16
C9202
100/6.3
C9203
0.22/35
R9201
0
R9202
R9203
33K
R9213
R9263
1K
R9264
1K
R9258
1.2K
SVR9201
10K
SVR9205
22K

CA-2 BOARD SIDE B



L9204
IC9204
IC9205
SVR9204
SVR9203
SVR9205
SVR9201
L9201
L9202
CAN
Q9201
Q9202
Q9214
Q9215

CA-2 CIRCUIT


CN9203
1 +5V
2 +1.8V
3 +2.7V
4 YL
5 VAP
6 AFY
7 R-Y
8 B-Y
9 WHD
10 C
11 Y
12 R-Y.MAT
13 AGC.L
14 AWC B-Y
15 AWC R
16 AWC B
17 AWC R-Y
18 YH
19 GND
20 SYNC
21 BLK+CP2
22 BF
23 SC1
24 SC2
TO CA3
CN9205
1 CAMERA Y
2 GND
3 CAMERA C
4 GND
TO VD1
IC9202
LC4013BM
IC9203
AN2351S
IC9204
MSM6985MS
IC9205
MSM6985MS
Q9201
2SA1179
Q9212
FMW1
Q9213
2SA1179
Q9204
2SC2812
Q9205
2SC2812
Q9206
2SC2812
Q9207
2SC2812
Q9208
2SC2812
Q9209
2SC2812
Q9211
2SC2812
Q9215
2SC2812
D9201
DCA015
D9202
DCA015
TP9202
ID
TP9204
T9201
(F013)
T9202
(F018)
T9203
(F030)
T9204
(F018)
SVR9202
2.2K
VAP.BAL
SVR9203
1K
C.BALANCE
SVR9204
100K
SIKISA
SVR9206
22K
B-Y.MAT
SVR9201
10K
O.B
SVR9205
22K
R9246
91
14
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CA- 2

***a: REC MODE**

<b> : REC MODE (TRANSISTOR ON)

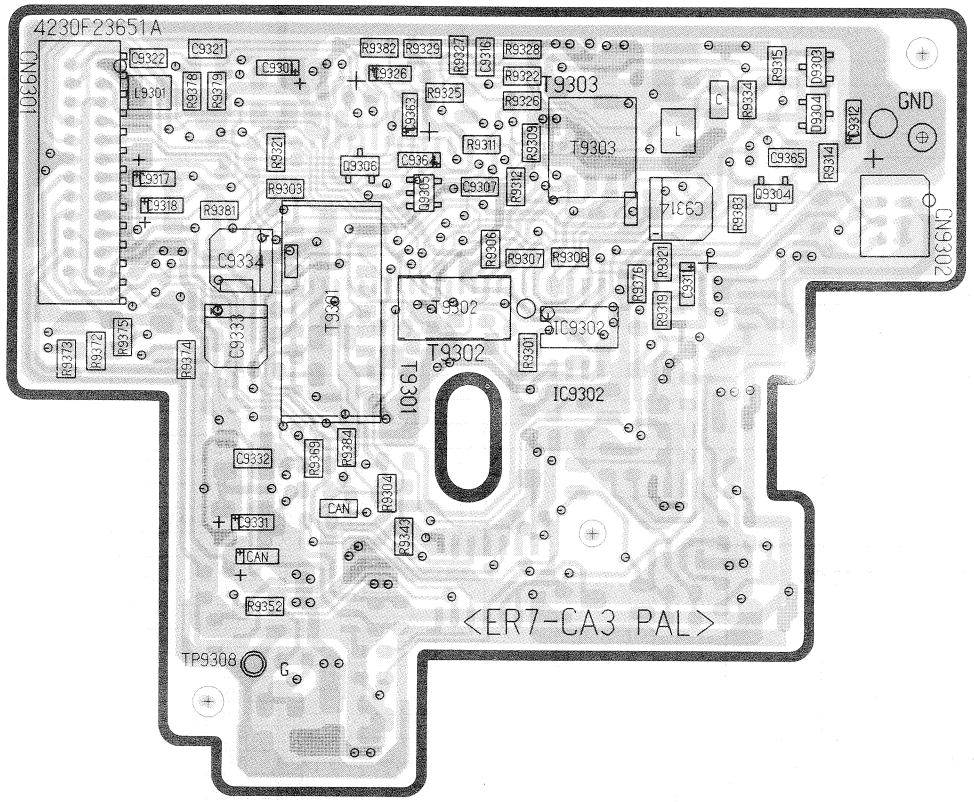
▷ : **R—Y signal**

▶ : **Color element signal**

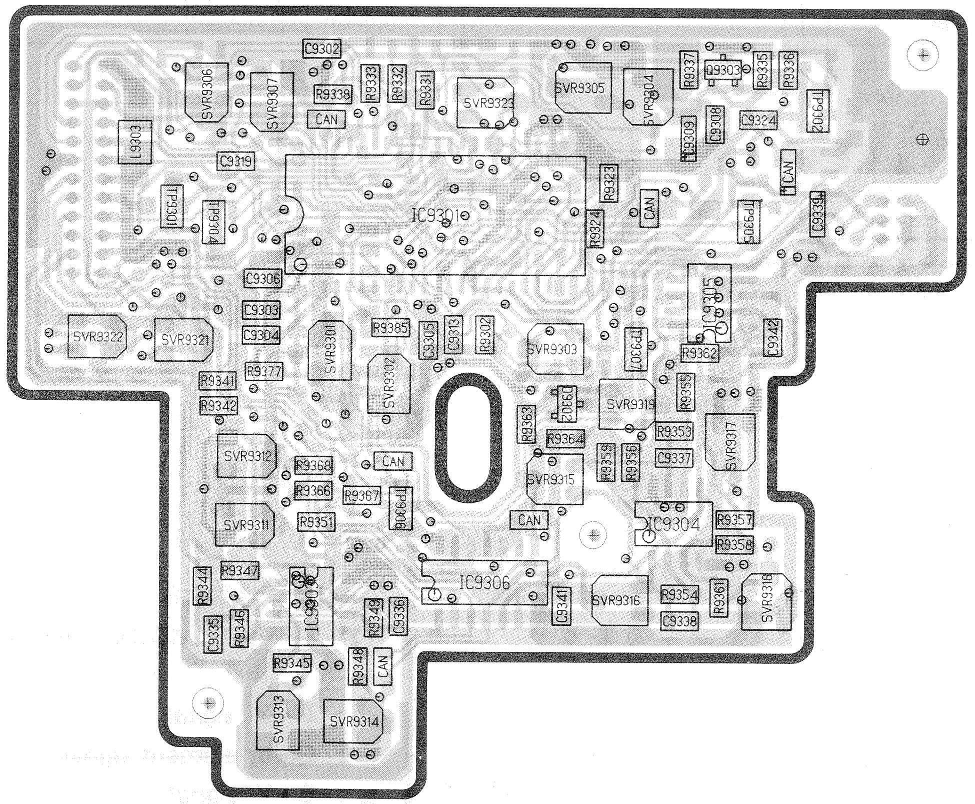
▶ : **B—Y signal**

▷ : **Transformed sync signal**

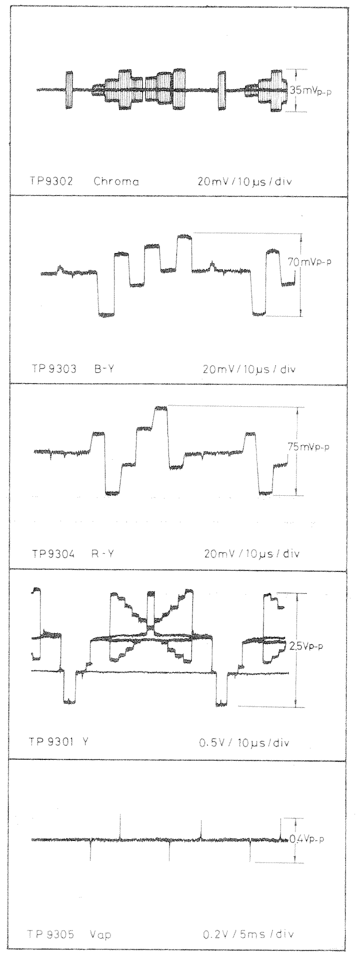
CA-3 BOARD SIDE A


4230F23651A
CN9301
CN9302
GND
T9301
T9302
T9303
IC9301
IC9302
IC9303
TP9308
<ER7-CA3 PAL>

CA-3 BOARD SIDE B


IC9301
IC9304
IC9305
IC9306
SVR9301
SVR9302
SVR9303
SVR9304
SVR9305
SVR9306
SVR9307
SVR9311
SVR9312
SVR9313
SVR9314
SVR9315
SVR9316
SVR9317
SVR9318
SVR9319
SVR9321
SVR9322
SVR9323

CA-3 BOARD (CAMERA)



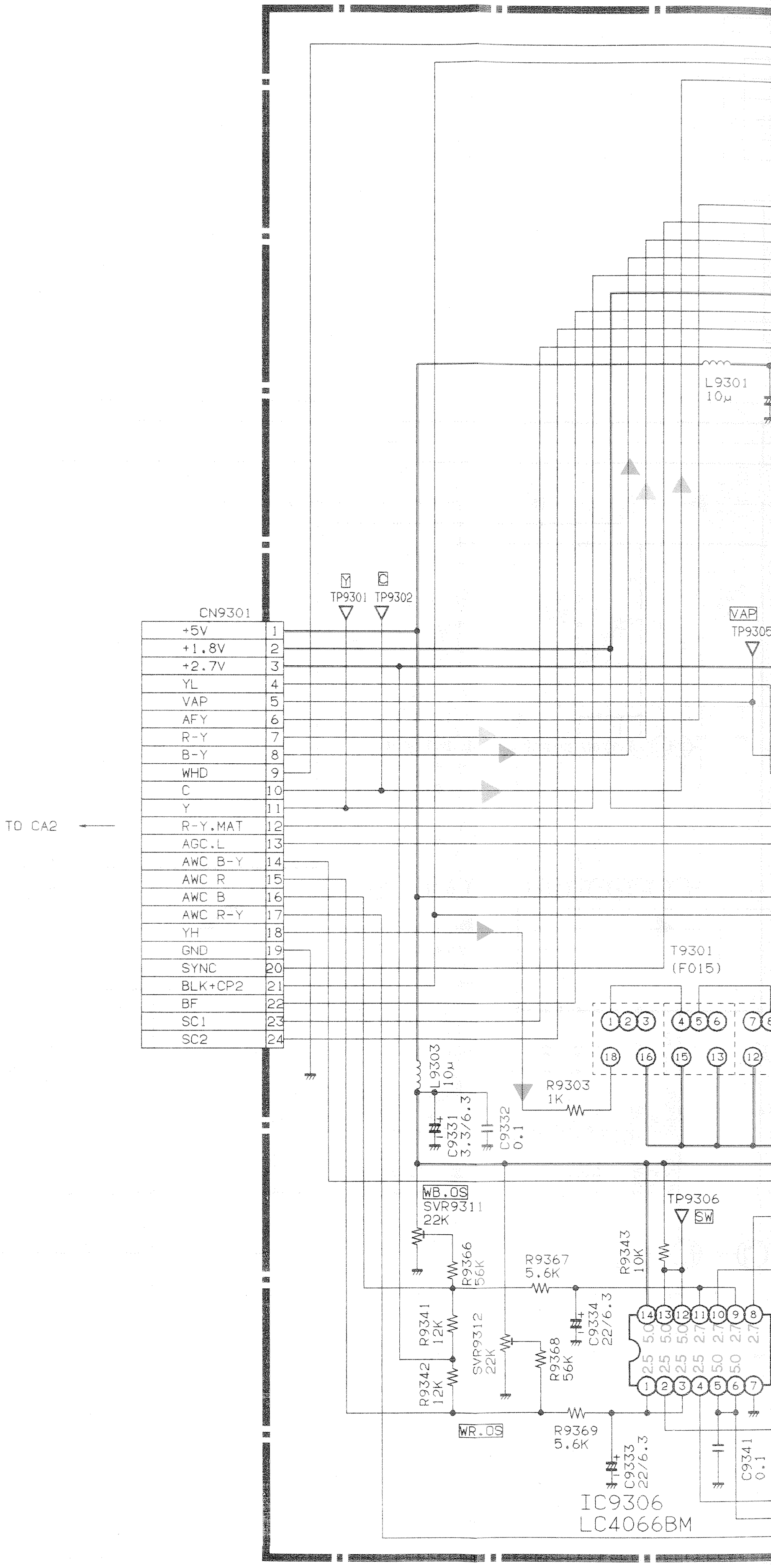
TP9302 Chroma 20mV/10µs/div

TP9303 B-Y 20mV/10µs/div

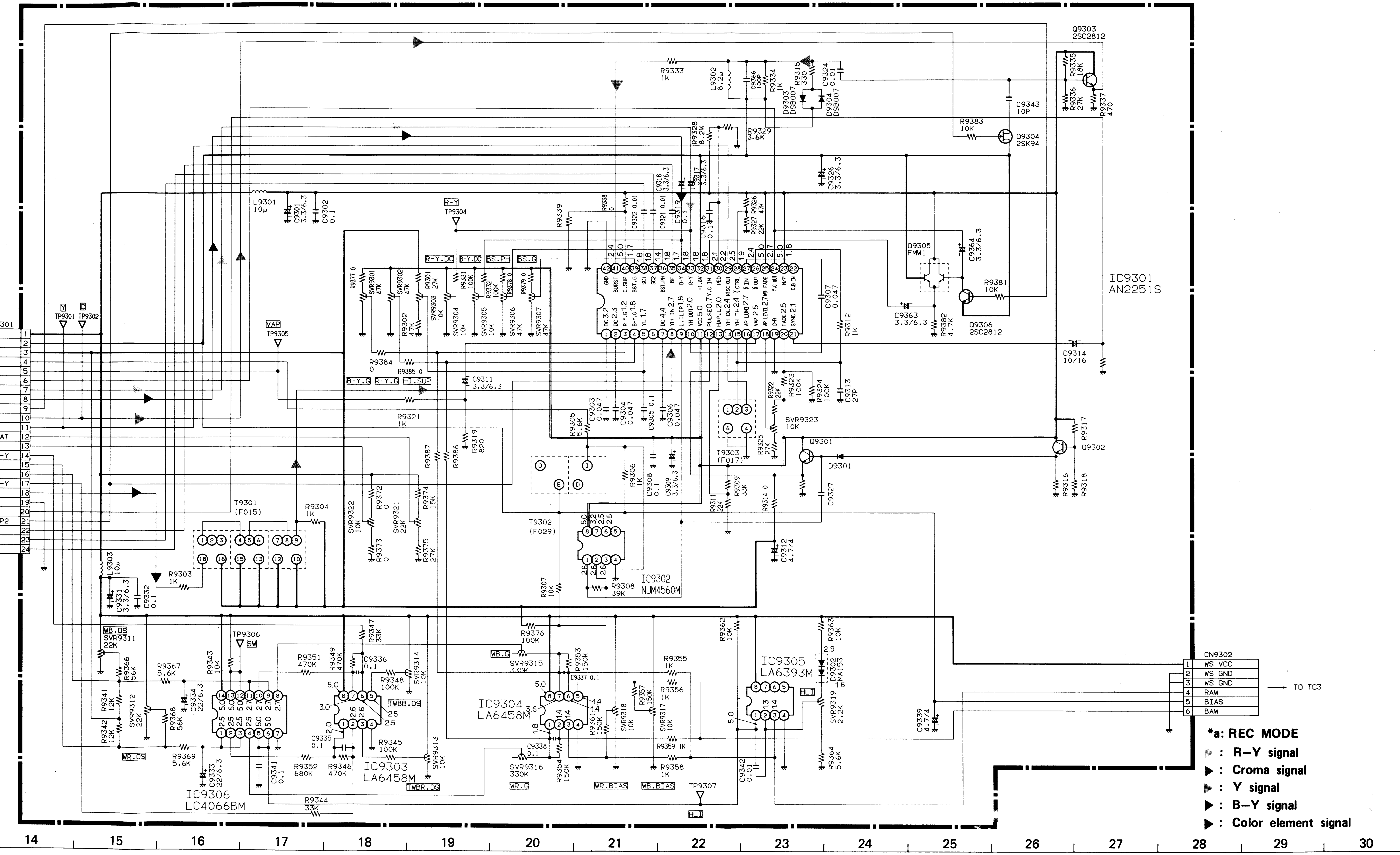
TP9304 R-Y 20mV/10µs/div

TP9301 Y 0.5V/10µs/div

TP9305 Vap 0.2V/5ms/div


TO CA2
CN9301
+5V 1
+1.8V 2
+2.7V 3
YL 4
VAP 5
AFY 6
R-Y 7
B-Y 8
WHD 9
C 10
Y 11
R-Y.MAT 12
AGC.L 13
AWC B-Y 14
AWC R 15
AWC B 16
AWC R-Y 17
YH 18
GND 19
SYNC 20
BLK+CP2 21
BF 22
SC1 23
SC2 24
Y TP9301
C TP9302
VAP TP9305
L9301 10µ
L9303 10µ
C9331 3.3/6.3
C9332 0.1
R9303 1K
T9301 (F015)
WB.OS SVR9311 22K
TP9306 SW
R9366 56K
R9367 5.6K
R9343 10K
R9341 12K
R9342 12K
SVR9312 22K
R9368 56K
C9334 22/6.3
WR.OS
R9369 5.6K
C9333 22/6.3
C9341 0.1
IC9306 LC4066BM

CA-3 CIRCUIT


IC9301
AN2251S
IC9302
NJM4560M
IC9303
LA6458M
IC9304
LA6458M
IC9305
LA6393M
IC9306
LC4066BM
Q9301
Q9302
Q9303
2SC2812
Q9304
2SK94
Q9305
FMW1
Q9306
2SC2812
D9301
D9302
MA153
D9303
DSB007
D9304
DSB007
T9301
(F015)
T9302
(F029)
T9303
(F017)
L9301
10μ
L9302
8.2μ
L9303
10μ
TP9301
TP9302
TP9304
R-Y
TP9305
VAP
TP9306
SW
TP9307
HLI
R-Y.DC
B-Y.DC
BS.PH
BS.G
B-Y.G
R-Y.G
HI.SUP
WB.OS
WR.OS
WB.G
WR.G
WR.BIAS
WB.BIAS
TWBB.OS
TWBR.OS
HLI
CN9302
WS VCC
WS GND
WS GND
RAW
BIAS
BAW
TO TC3
GND
BURST
C.SUP
R-Y.G
B-Y.G
BST.G
YL
SC1
SC2
BST.PH
BF
L.CLIP
B-Y
R-Y
+1.8V
VCC
PULSE
Y.C IN
HAP.L
PED
YH DL
NTSC OUT
YH TH
Y CTRL
AP LIMI
Y IN
VAP
Y OUT
AP LEVEL
WB FADE
CHR
FADE
Y.C OUT
SYNC
N/P
C.B IN
R9301 27K
R9302 47K
R9303 1K
R9304 1K
R9305 5.6K
R9306 1K
R9307 10K
R9308 39K
R9309 33K
R9311 22K
R9312 1K
R9314 0
R9315 330
R9316
R9317
R9318
R9319 820
R9321 1K
R9322 22K
R9323 100K
R9324 100K
R9325 27K
R9326 4.7K
R9327 22K
R9328 8.2K
R9329 3.6K
R9331 100K
R9332 100K
R9333 1K
R9334 1K
R9335 18K
R9336 27K
R9337 470
R9338 0
R9339
R9341 12K
R9342 12K
R9343 10K
R9344 33K
R9345 100K
R9346 470K
R9347 33K
R9348 100K
R9349 470K
R9351 470K
R9352 680K
R9353 150K
R9354 150K
R9355 1K
R9356 1K
R9357 150K
R9358 1K
R9359 1K
R9361 150K
R9362 10K
R9363 10K
R9364 5.6K
R9366 56K
R9367 5.6K
R9368 56K
R9369 5.6K
R9372 0
R9373 0
R9374 15K
R9375 27K
R9376 100K
R9377 0
R9378 0
R9379 0
R9381 10K
R9382 4.7K
R9383 10K
R9384 0
R9385 0
R9386
R9387
SVR9301 47K
SVR9302 47K
SVR9303 10K
SVR9304 10K
SVR9305 10K
SVR9306 47K
SVR9307 47K
SVR9311 22K
SVR9312 22K
SVR9313 10K
SVR9314 10K
SVR9315 330K
SVR9316 330K
SVR9317 10K
SVR9318 10K
SVR9319 2.2K
SVR9321 22K
SVR9322 10K
SVR9323 10K
C9301 3.3/6.3
C9302 0.1
C9303 0.047
C9304 0.047
C9305 0.1
C9306 0.047
C9307 0.047
C9308 0.1
C9309 3.3/6.3
C9311 3.3/6.3
C9312 4.7/4
C9313 27P
C9314 10/16
C9316 0.1
C9317 3.3/6.3
C9318 3.3/6.3
C9319 0.1
C9321 0.01
C9322 0.01
C9324 0.01
C9326 3.3/6.3
C9327
C9331 3.3/6.3
C9332 0.1
C9333 22/6.3
C9334 22/6.3
C9335 0.1
C9336 0.1
C9337 0.1
C9338 0.1
C9339 4.7/4
C9341 0.1
C9342 0.01
C9343 10P
C9363 3.3/6.3
C9364 3.3/6.3
C9366 100P
14
15
16
17
18
19
20
21
22
23
24
25
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27
28
29
30

***a: REC MODE**

▶ : **R—Y signal**

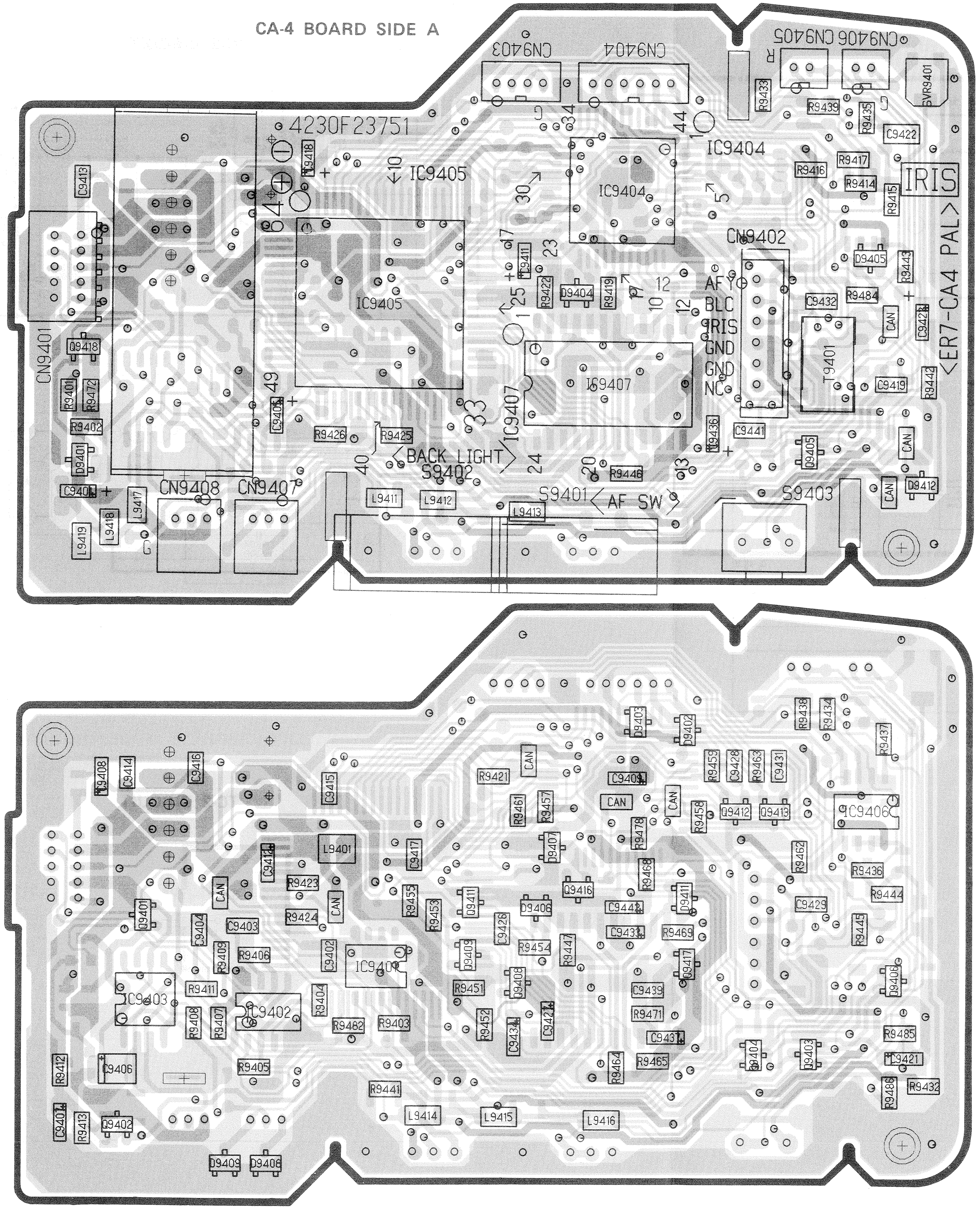
▶ : **Croma signal**

▶ : **Y signal**

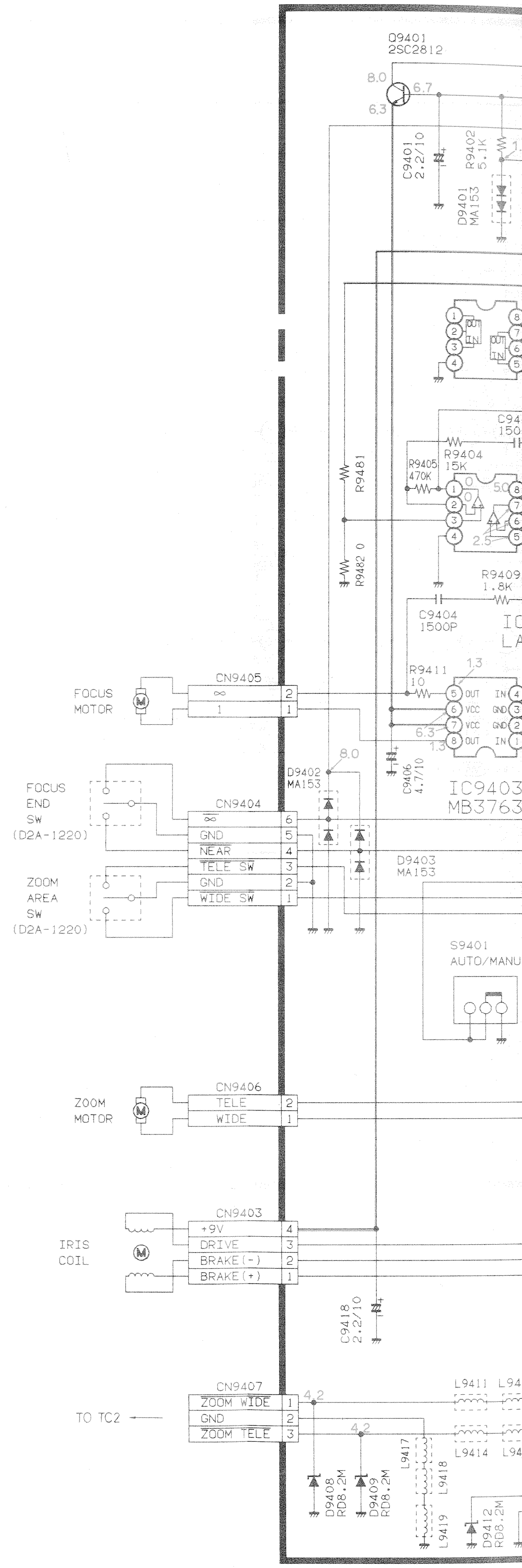
▶ : **B—Y signal**

▶ : **Color element signal**

CA-4 BOARD SIDE A

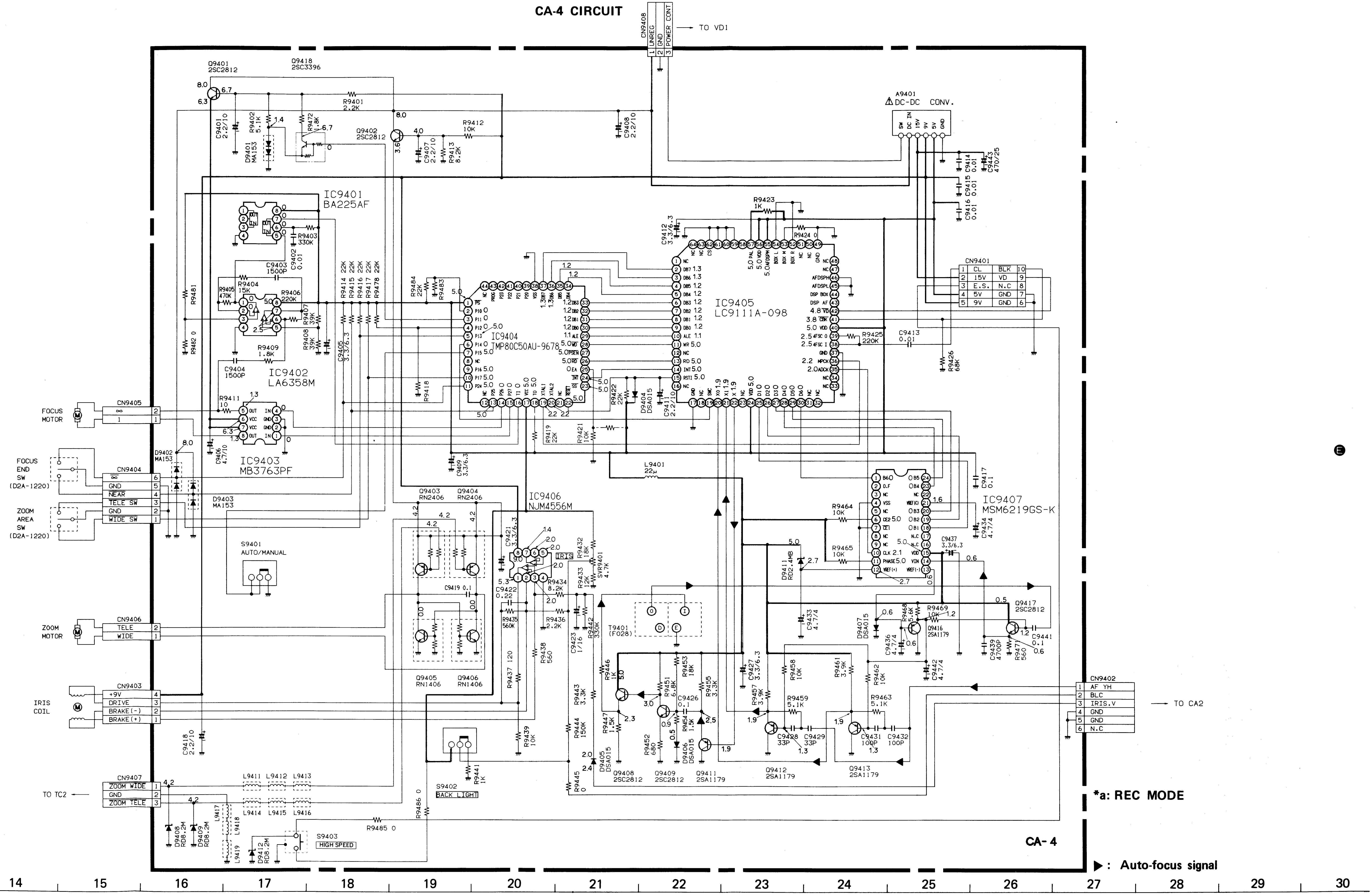


CN9403
CN9404
CN9405
CN9406
4230F23751
IC9405
IC9404
IC9407
CN9402
AF
BLC
IRIS
GND
GND
NC
IRIS
<ER7-CA4 PAL>
T9401
BACK LIGHT
S9402
S9401 <AF SW>
S9403
CN9401
CN9408
CN9407
L9411
L9412
L9413
R9426
R9425
R9446
R9433
R9439
R9435
C9422
R9416
R9417
R9414
R9415
D9405
R9443
C9432
R9484
C9428
C9419
R9442
C9441
R9436
Q9405
Q9412
C9413
C9418
Q9418
R9401
R9472
R9402
Q9401
C9401
L9417
L9418
L9419
C9405
R9411
R9422
D9404
R9419
SVR9401
CAN
IC9406
IC9403
IC9402
IC9401
L9401
L9414
L9415
L9416
Q9401
Q9402
D9409
D9406
R9412
R9413
C9406
C9407
R9408
R9414
C9416
C9415
C9414
R9421
R9461
R9457
C9409
R9453
C9428
R9463
C9431
R9438
R9434
R9437
Q9403
Q9402
Q9412
Q9413
R9458
R9478
R9462
R9436
R9444
C9429
R9445
Q9416
R9468
Q9411
C9442
C9433
R9469
Q9417
C9439
R9471
C9437
R9485
C9421
R9486
R9432
R9464
R9465
Q9404
Q9403
Q9406
R9454
R9447
R9451
R9452
C9434
C9427
Q9408
Q9409
C9426
D9406
Q9407
R9455
R9453
Q9411
C9417
C9412
R9423
R9424
C9403
C9404
R9409
R9406
R9411
R9408
R9407
R9405
R9404
R9482
R9403
R9441
C9402



D9401
2SC2812
8.0
6.7
6.3
C9401
2.2/10
R9402
5.1K
D9401
MA153
R9481
R9405
470K
R9404
15K
R9482 0
R9409
1.8K
C9404
1500P
R9411
10
6.3
1.3
13
C9406
4.7/10
IC9403
MB3763
FOCUS MOTOR
CN9405
FOCUS END SW
(D2A-1220)
CN9404
GND
NEAR
TELE SW
GND
WIDE SW
ZOOM AREA SW
(D2A-1220)
D9402
MA153
D9403
MA153
S9401
AUTO/MANU
ZOOM MOTOR
CN9406
TELE
WIDE
IRIS COIL
CN9403
+9V
DRIVE
BRAKE(-)
BRAKE(+)
C9418
2.2/10
TO TC2
CN9407
ZOOM WIDE
GND
ZOOM TELE
4.2
4.2
L9411
L9414
L9417
L9418
L9419
D9408
RD8.2M
D9409
RD8.2M
D9412
RD8.2M

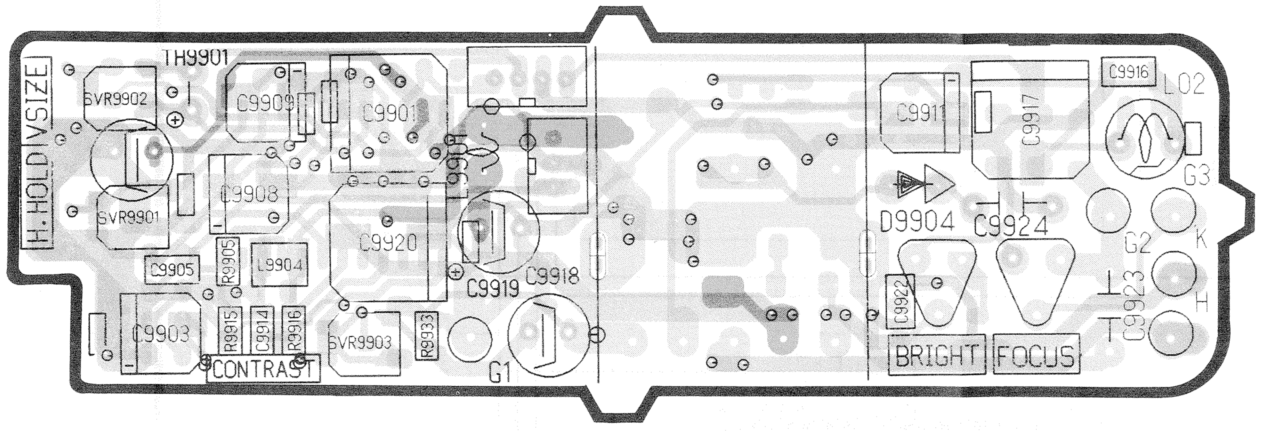
CA-4 CIRCUIT


CN9408
1 UNREG
2 GND
3 POWER CONT
TO VD1
Q9401 2SC2812
Q9418 2SC3396
Q9402 2SC2812
R9401 2.2K
R9412 10K
C9401 2.2/10
R9402 5.1K
D9401 MA153
R9472 1.8K
C9407 2.2/10
R9413 8.2K
C9408 2.2/10
A9401
⚠DC-DC CONV.
SW DC IN 15V 9V 5V GND
C9414 0.01
C9443 470/25
C9415 0.01
C9416 0.01
IC9401 BA225AF
R9403 330K
C9402 0.01
C9403 1500P
R9404 15K
R9405 470K
R9406 220K
R9407 39K
R9408 39K
R9409 1.8K
C9404 1500P
IC9402 LA6358M
R9481
R9482 0
R9414 22K
R9415 22K
R9416 22K
R9417 22K
R9478 22K
C9405 3.3/6.3
R9484 22K
R9483
R9418
IC9404 TMP80C50AU-9678
IC9405 LC9111A-098
R9423 1K
R9424 0
C9412 3.3/6.3
R9425 220K
C9413 0.01
R9426 68K
CN9401
1 CL 15V E.S. 5V 9V
BLK VD N.C GND GND 10 9 8 7 6
R9422 22K
D9404 DSA015
C9411 2.2/10
R9419 22K
R9421 10K
C9409 3.3/6.3
L9401 22μ
FOCUS MOTOR
CN9405
IC9403 MB3763PF
R9411 10
C9406 4.7/10
D9402 MA153
D9403 MA153
FOCUS END SW (D2A-1220)
CN9404
GND NEAR TELE SW GND WIDE SW
ZOOM AREA SW (D2A-1220)
S9401 AUTO/MANUAL
Q9403 RN2406
Q9404 RN2406
Q9405 RN1406
Q9406 RN1406
C9419 0.1
IC9406 NJM4556M
C9421 3.3/6.3
IRIS
R9432 18K
SVR9401 4.7K
R9433 12K
R9434 8.2K
C9422 0.22
R9435 560K
R9436 2.2K
R9442 330K
C9423 1/16
R9437 120
R9438 560
R9439 10K
ZOOM MOTOR
CN9406
TELE WIDE
IRIS COIL
CN9403
+9V DRIVE BRAKE(-) BRAKE(+)
C9418 2.2/10
S9402 BACK LIGHT
R9441 1K
T9401 (F028)
R9443 3.3K
R9444 150K
R9445 0
R9446 1K
R9447 1.5K
R9451 6.8K
R9453 18K
R9455 3.3K
R9452 680
R9454 1.5K
C9426 0.1
D9405 DSA015
D9406 DSA015
Q9408 2SC2812
Q9409 2SC2812
Q9411 2SA1179
C9427 3.3/6.3
R9457 3.9K
R9458 10K
R9459 5.1K
C9428 33P
C9429 33P
Q9412 2SA1179
R9461 3.9K
R9462 10K
R9463 5.1K
C9431 100P
C9432 100P
Q9413 2SA1179
IC9407 MSM6219GS-K
C9417 0.1
R9464 10K
R9465 10K
D9411 RD2.4MB
C9433 4.7/4
C9434 4.7/4
C9437 3.3/6.3
D9407 DSA015
R9468 5.6K
R9469 10K
Q9416 2SA1179
C9436 4.7/4
C9442 4.7/4
Q9417 2SC2812
C9439 4700P
R9471 560
C9441 0.1
CN9402
1 AF YH
2 BLC
3 IRIS.V
4 GND
5 GND
6 N.C
TO CA2
CN9407
ZOOM WIDE GND ZOOM TELE
TO TC2
L9411 L9412 L9413
L9414 L9415 L9416
L9417 L9418 L9419
D9408 RD8.2M
D9409 RD8.2M
D9412 RD8.2M
R9485 0
R9486 0
S9403 HIGH SPEED
CA-4
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
E

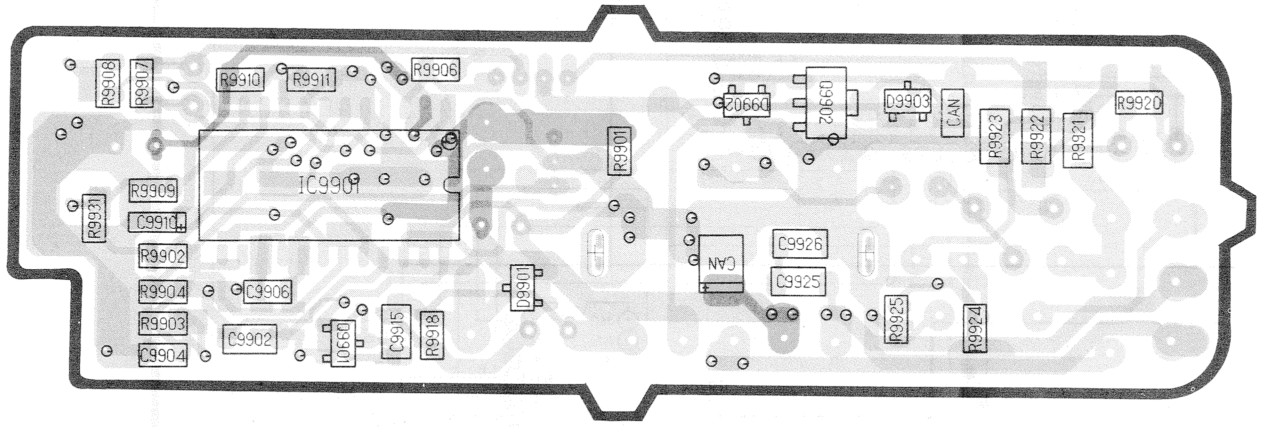
***a: REC MODE**

▶ : **Auto-focus signal**

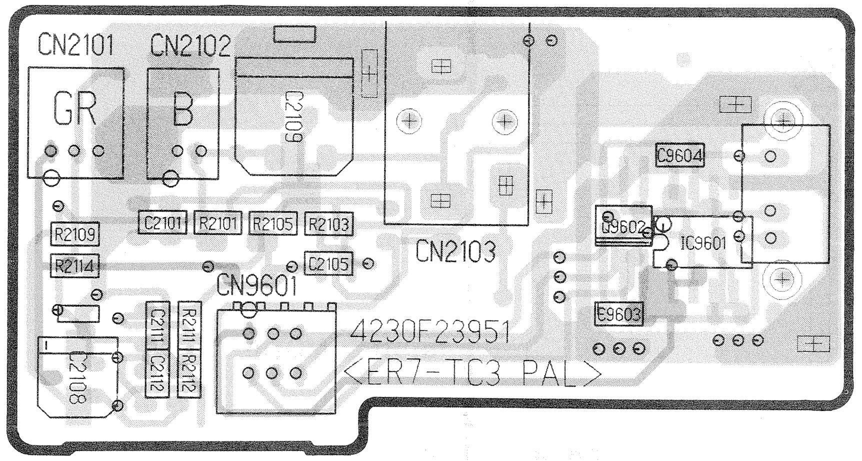
VF-1 BOARD SIDE A


H.HOLD
V.SIZE
TH9901
SVR9902
SVR9901
C9909
C9901
C9908
C9920
C9905
L9904
C9919
C9918
C9903
R9905
C9914
R9915
R9916
CONTRAST
SVR9903
R9933
G1
C9911
C9917
C9916
L02
G3
G2
K
H
D9904
C9924
C9922
C9923
BRIGHT
FOCUS

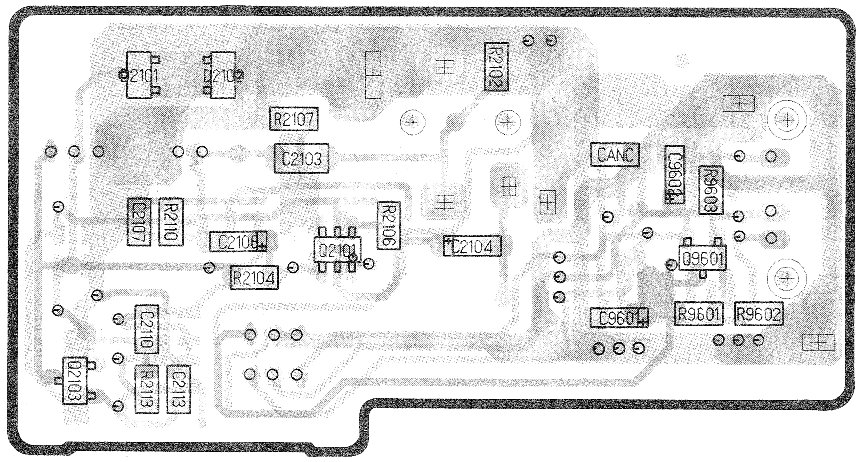
VF-1 BOARD SIDE B


R9908
R9907
R9910
R9911
R9906
C2066
Q9902
D9903
CAN
R9920
R9923
R9922
R9921
R9901
IC9901
R9931
R9909
C9910
R9902
R9904
C9906
R9903
C9904
C9902
D9901
C9915
R9918
Q9901
C9926
C9925
R9925
R9924

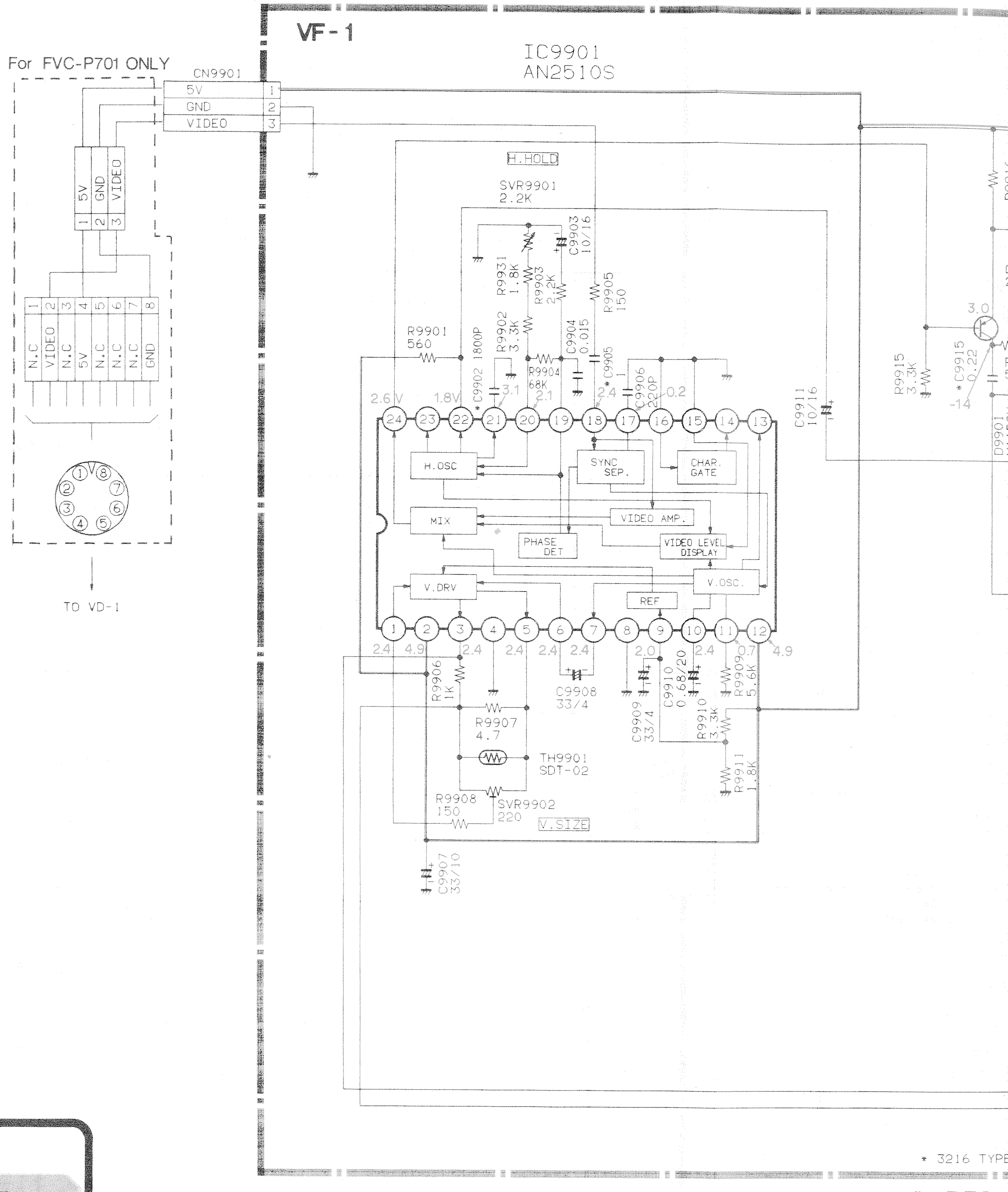
TC-3 BOARD SIDE A


CN2101
CN2102
GR
B
C2109
R2109
C2101
R2101
R2105
R2103
R2114
C2105
CN9601
CN2103
C2111
C2112
R2111
R2112
C2108
4230F23951
<ER7-TC3 PAL>
C9604
Q9602
IC9601
C9603

TC-3 BOARD SIDE B

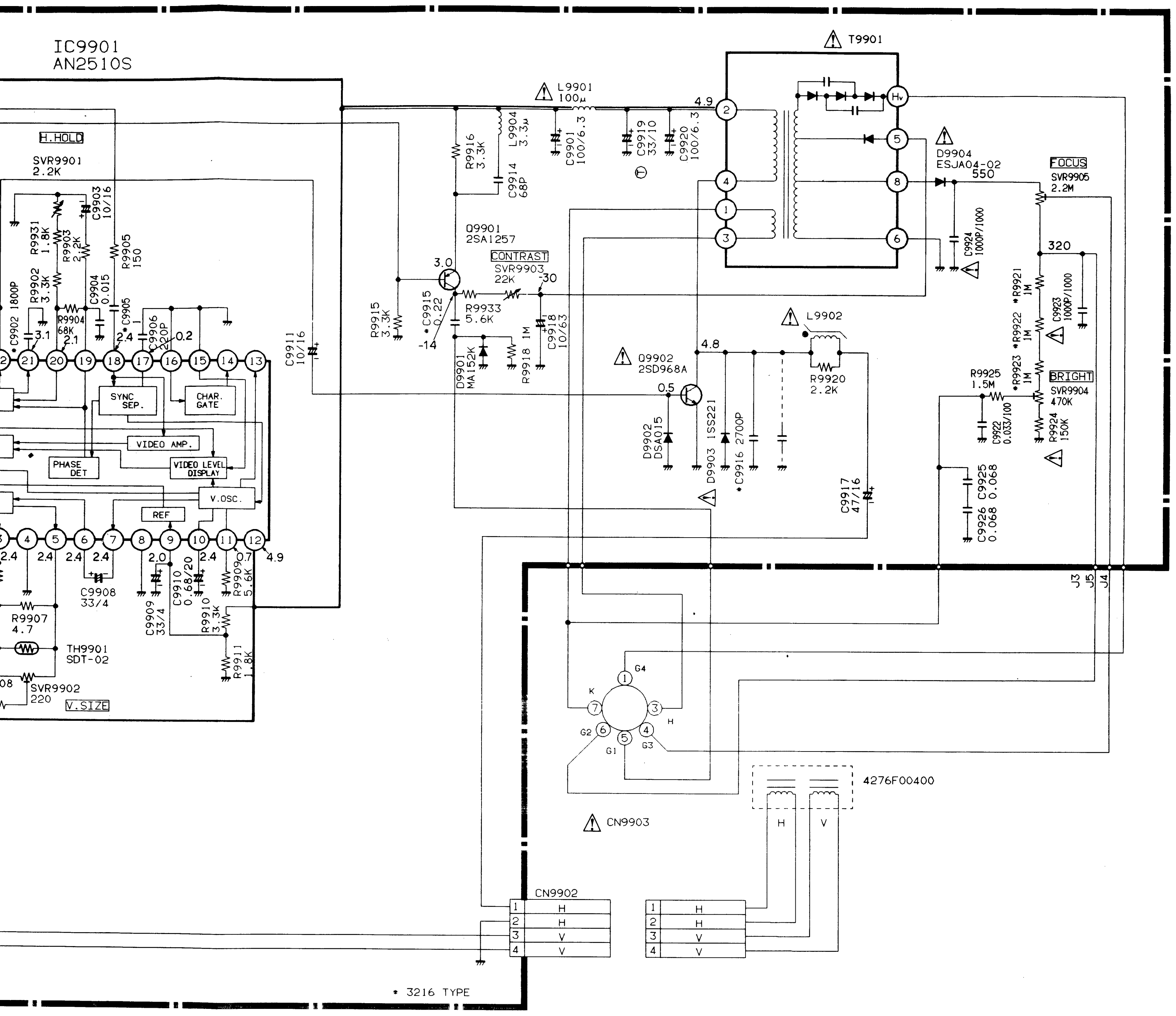

Q2101
Q2102
R2102
R2107
C2103
C2107
R2110
C2106
Q2104
R2106
R2104
C2104
CANC
D9602
R9603
Q9601
C9601
R9601
R9602
C2110
Q2103
R2113
C2113

VF-1 CIRC


For FVC-P701 ONLY
CN9901
5V
GND
VIDEO
N.C
N.C
N.C
N.C
GND
TO VD-1
VF-1
IC9901
AN2510S
H.HOLD
SVR9901
2.2K
R9931
1.8K
R9903
2.2K
C9903
10/16
R9905
150
R9901
560
C9902
1800P
R9902
3.3K
R9904
68K
C9904
0.015
C9905
C9906
220P
C9911
10/16
H.OSC
SYNC SEP.
CHAR GATE
MIX
VIDEO AMP.
PHASE DET
VIDEO LEVEL DISPLAY
V.DRV
REF
V.OSC.
R9906
1K
R9907
4.7
C9908
33/4
C9909
33/4
C9910
0.68/20
R9909
5.6K
R9910
3.3K
R9911
1.8K
TH9901
SDT-02
R9908
150
SVR9902
220
V.SIZE
C9907
33/10
R9915
3.3K
C9915
0.22
• 3216 TYPE

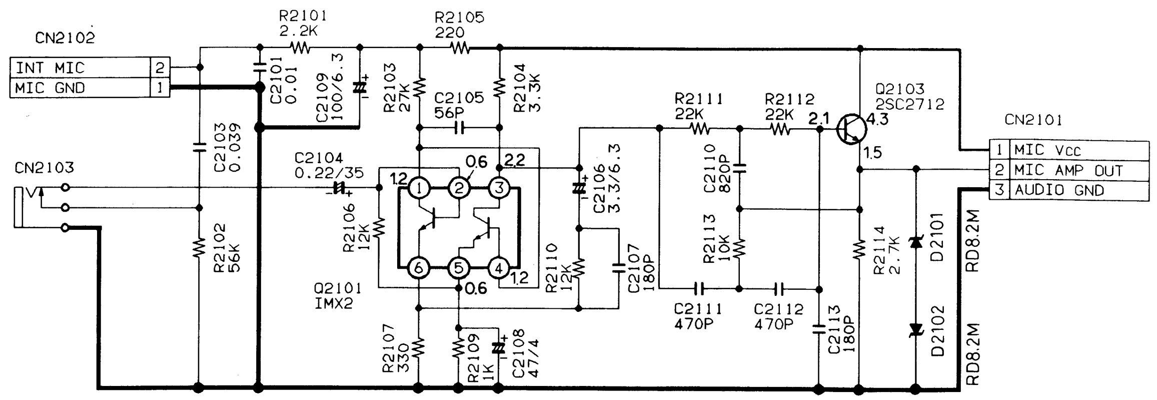
*a:REC

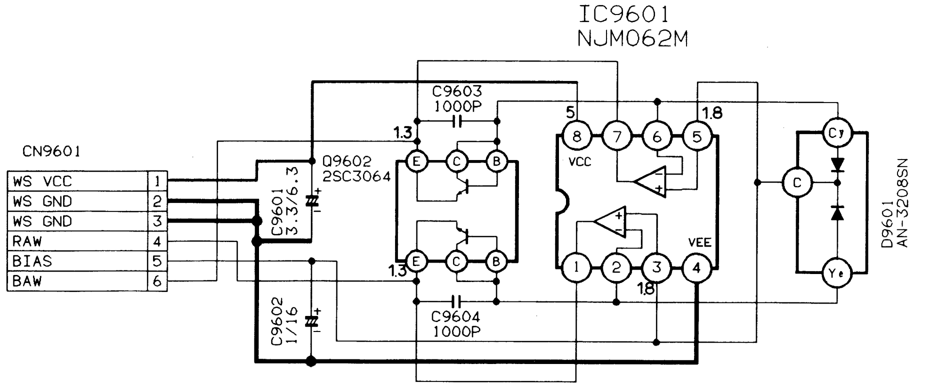
VF-1 CIRCUIT


IC9901
AN2510S
H.HOLD
SVR9901
2.2K
SYNC SEP.
CHAR. GATE
VIDEO AMP.
PHASE DET
VIDEO LEVEL DISPLAY
V.OSC.
REF
R9931 1.8K
R9902 3.3K
R9903 2.2K
C9903 10/16
R9905 150
C9902 1800P
C9904 0.015
C9905
R9904 68K
C9906 220P
C9908 33/4
C9909 33/4
C9910 0.68/20
R9910 3.3K
R9909 5.6K
R9911 1.8K
R9907 4.7
TH9901 SDT-02
SVR9902 220
V.SIZE
C9911 10/16
L9901 100μ
R9916 3.3K
L9904 3.3μ
C9914 68P
C9901 100/6.3
C9919 33/10
C9920 100/6.3
T9901
D9904 ESJA04-02
FOCUS
SVR9905 2.2M
Q9901 2SA1257
CONTRAST
SVR9903 22K
R9915 3.3K
C9915 0.22
R9933 5.6K
R9918 1M
C9918 10/63
D9901 MA152K
Q9902 2SD968A
D9902 DSA015
D9903 1SS221
C9916 2700P
L9902
R9920 2.2K
C9917 47/16
C9924 1000P/1000
R9921 1M
R9922 1M
R9923 1M
C9923 1000P/1000
R9925 1.5M
C9922 0.033/100
BRIGHT
SVR9904 470K
R9924 150K
C9925 0.068
C9926 0.068
CN9903
G4 K H G2 G1 G3
4276F00400
CN9902
H H V V
J3 J5 J4
4.9 3.0 -30 -14 4.8 0.5 550 320 2.4 2.0 0.7 0.2 3.1 2.1
* 3216 TYPE

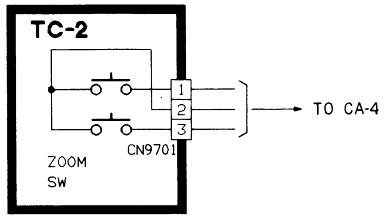
*a:REC MODE

TC-3 CIRCUIT

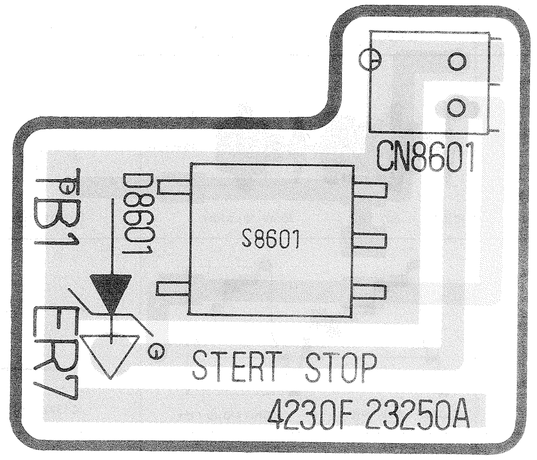

CN2102
INT MIC
MIC GND
CN2103
R2101 2.2K
R2105 220
C2101 0.01
C2109 100/6.3
R2103 27K
C2105 56P
R2104 3.3K
C2103 0.039
C2104 0.22/35
R2106 12K
R2102 56K
Q2101 IMX2
R2107 330
R2109 1K
C2108 47/4
C2106 3.3/6.3
R2110 12K
C2107 180P
R2111 22K
R2112 22K
C2110 820P
R2113 10K
C2111 470P
C2112 470P
C2113 180P
Q2103 2SC2712
R2114 2.7K
D2101 RD8.2M
D2102 RD8.2M
CN2101
1 MIC Vcc
2 MIC AMP OUT
3 AUDIO GND
4.3 2.1 1.5 12 06 22 0.6


IC9601
NJM062M
CN9601
WS VCC
WS GND
WS GND
RAW
BIAS
BAW
C9603 1000P
C9604 1000P
Q9602 2SC3064
C9601 3.3/6.3
C9602 1/16
VCC
VEE
D9601 AN-3208SN
1.3 5 1.8

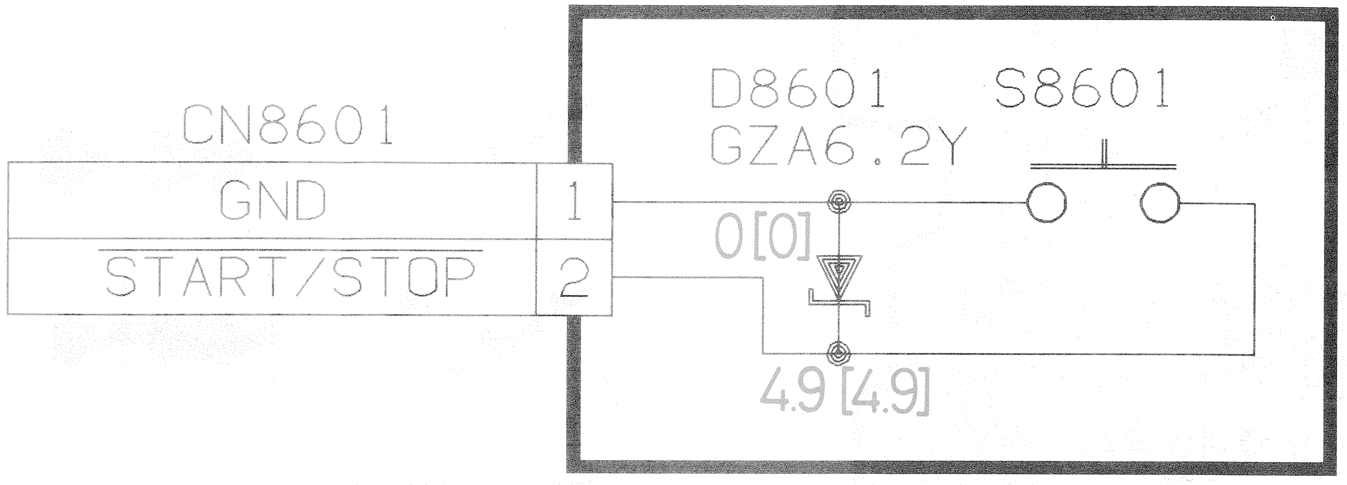
TC-2 CIRCUIT

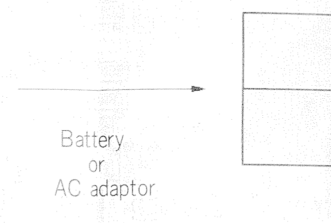

TC-2
ZOOM SW
CN9701
TO CA-4

TB-1 BOARD SIDE A

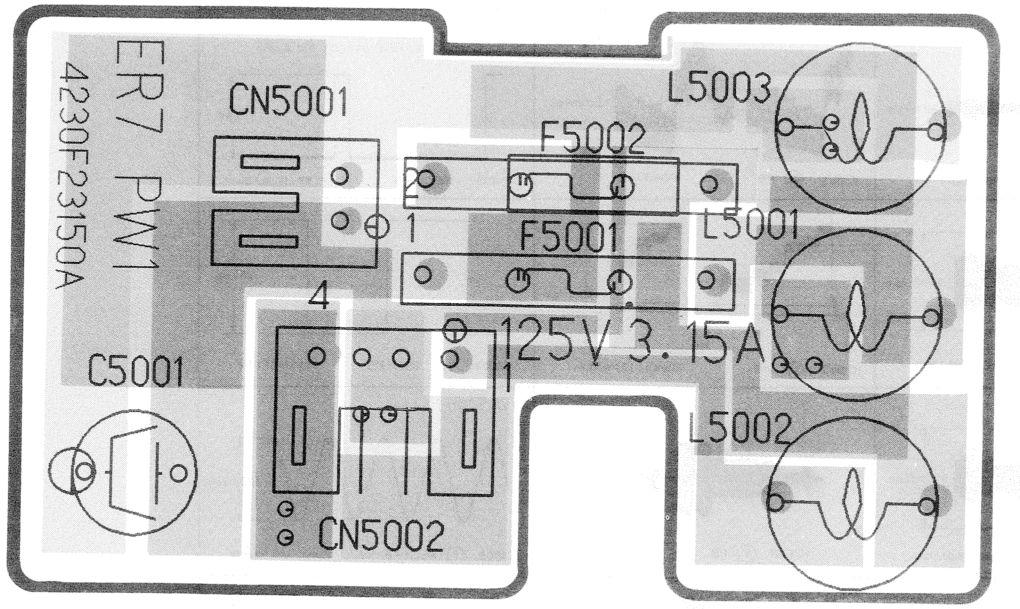

CN8601
TB1
D8601
S8601
ER7
STERT STOP
4230F 23250A

TB-1 CIRCUIT

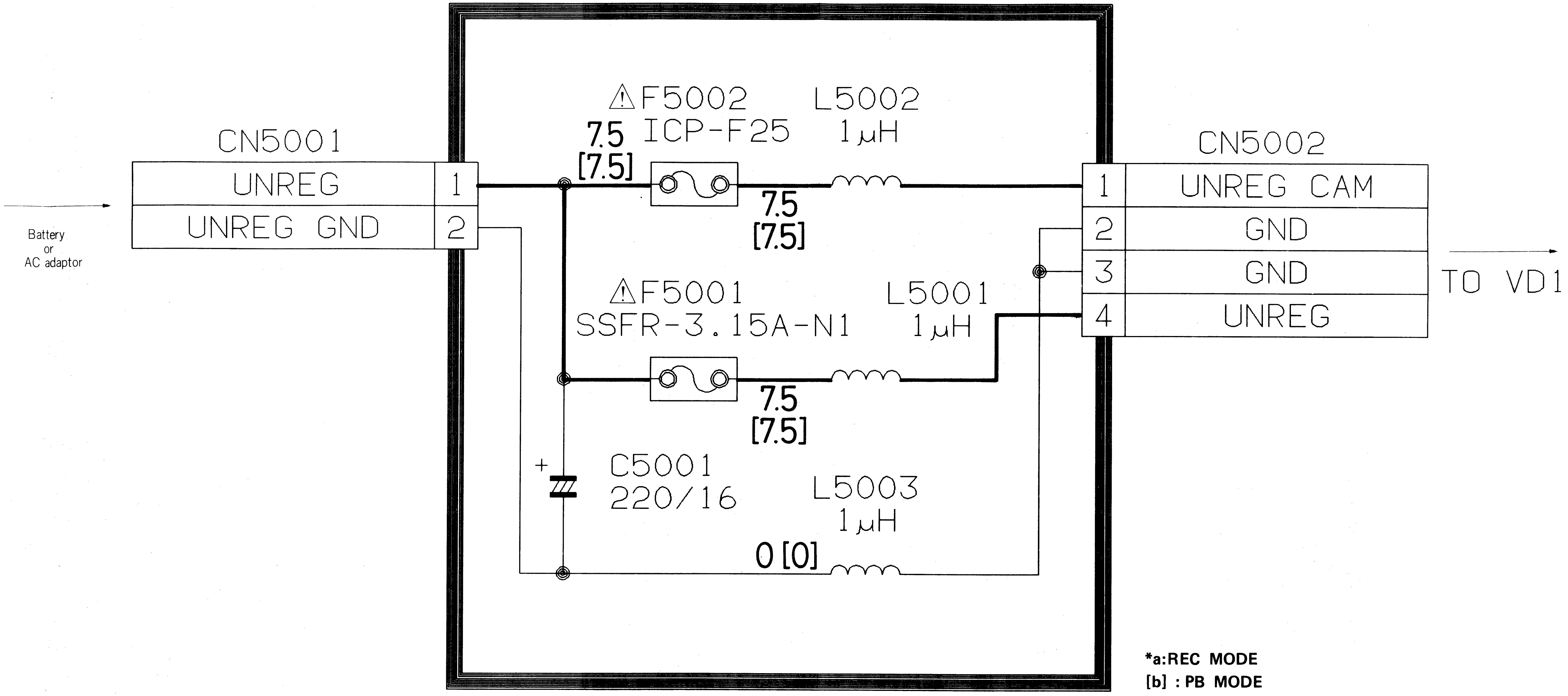

CN8601
GND
1
START/STOP
2
D8601
GZA6.2Y
S8601
0 [0]
4.9 [4.9]


Battery
or
AC adaptor

PW-1 BOARD SIDE A


ER7 PW1
4230F23150A
CN5001
L5003
F5002
2
1
F5001
L5001
4
125V 3.15A
1
C5001
L5002
CN5002

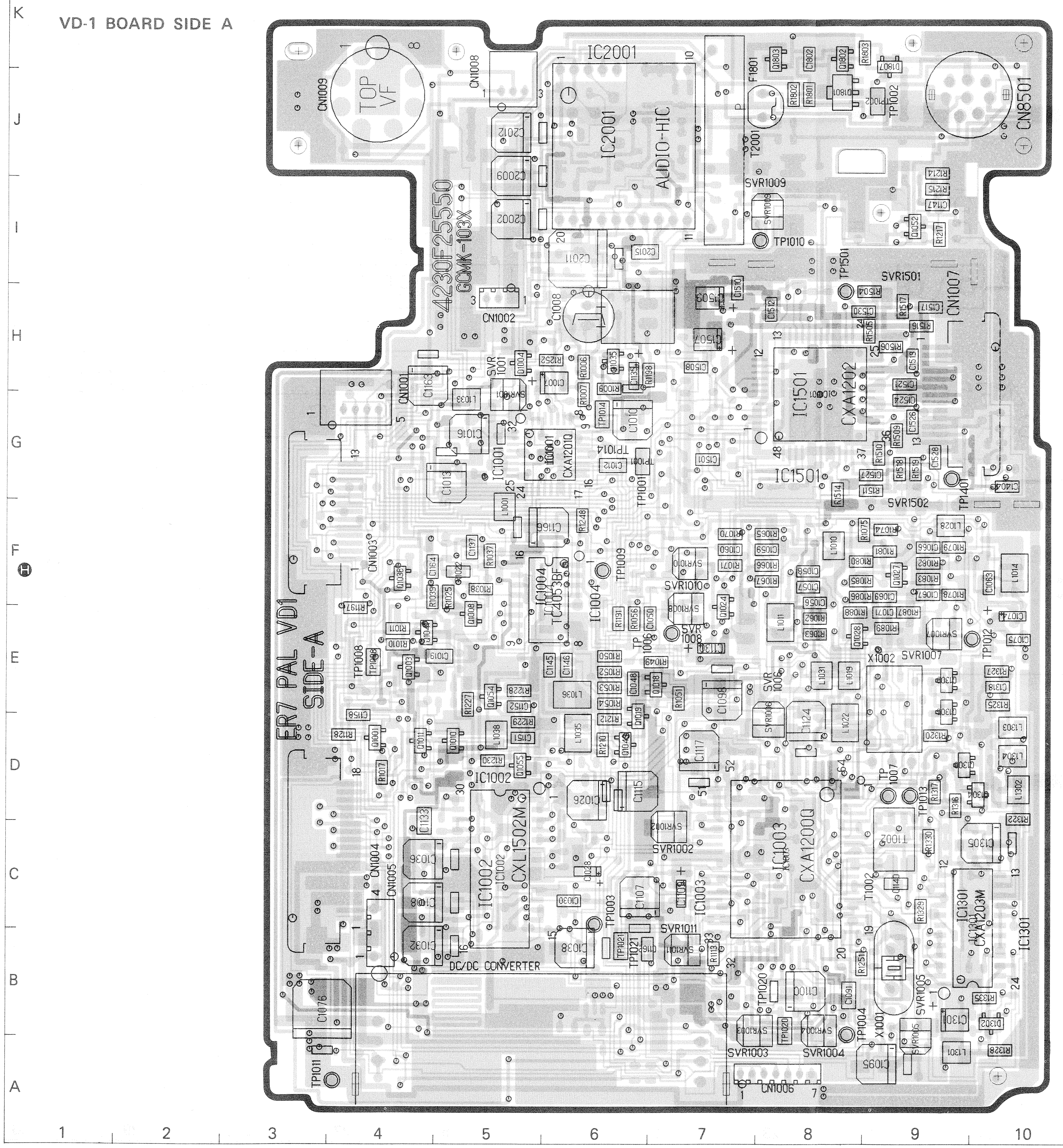
PW-1 CIRCUIT



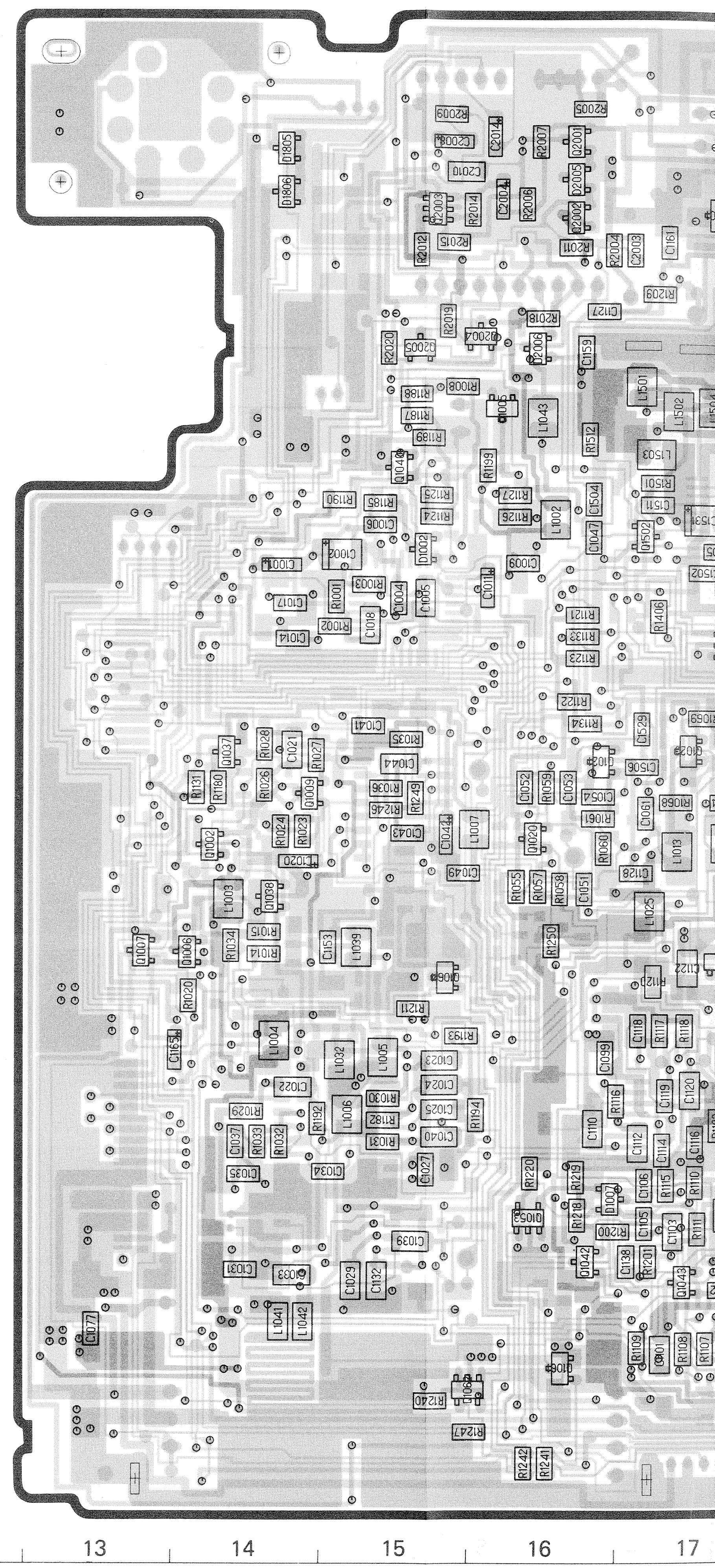
CN5001
UNREG
UNREG GND
1
2
Battery
or
AC adaptor
⚠F5002
ICP-F25
L5002
1μH
7.5
[7.5]
7.5
[7.5]
⚠F5001
SSFR-3.15A-N1
L5001
1μH
7.5
[7.5]
C5001
220/16
L5003
1μH
0 [0]
CN5002
1
2
3
4
UNREG CAM
GND
GND
UNREG
TO VD1

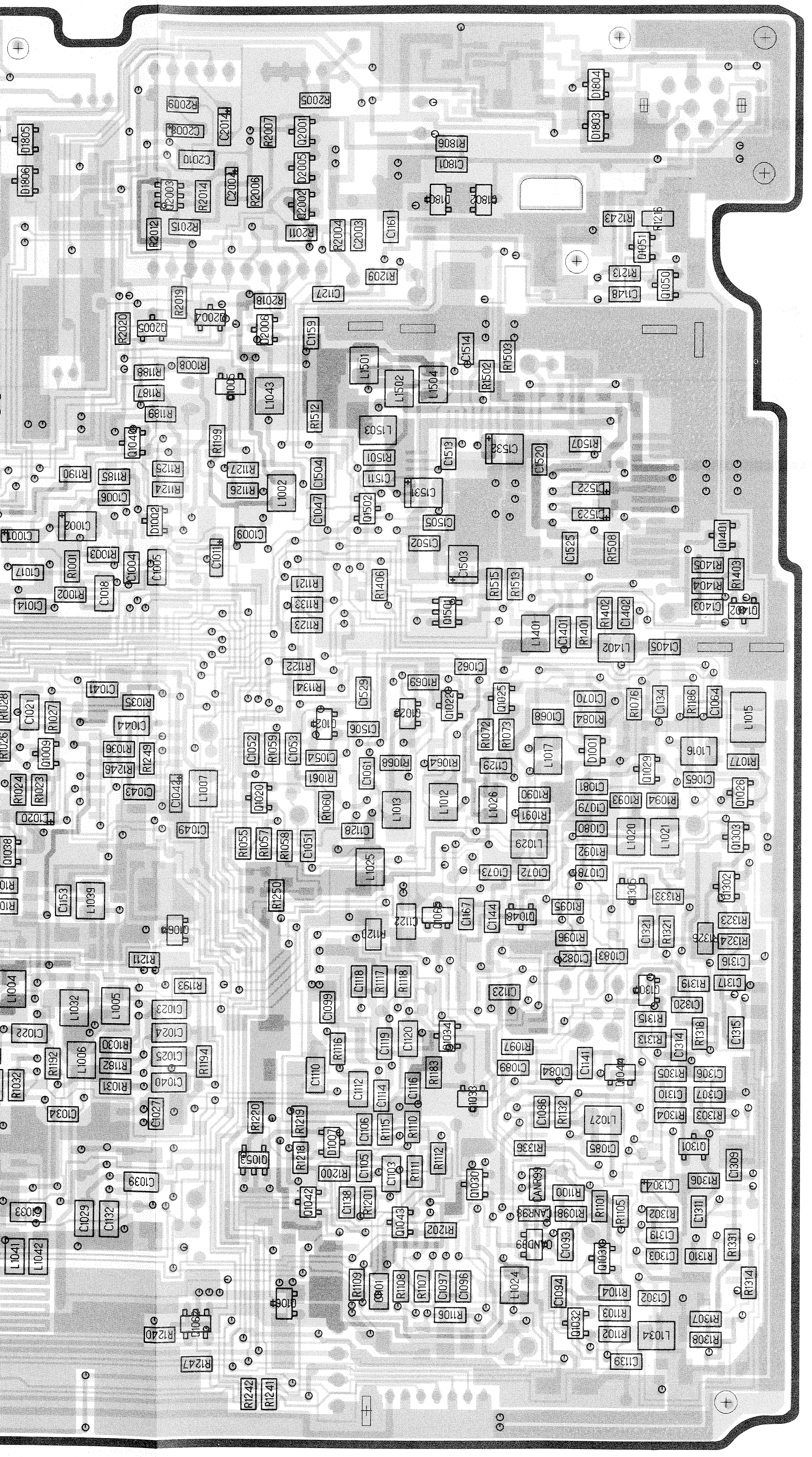
***a:REC MODE**
[b] : PB MODE

VD-1 BOARD SIDE A

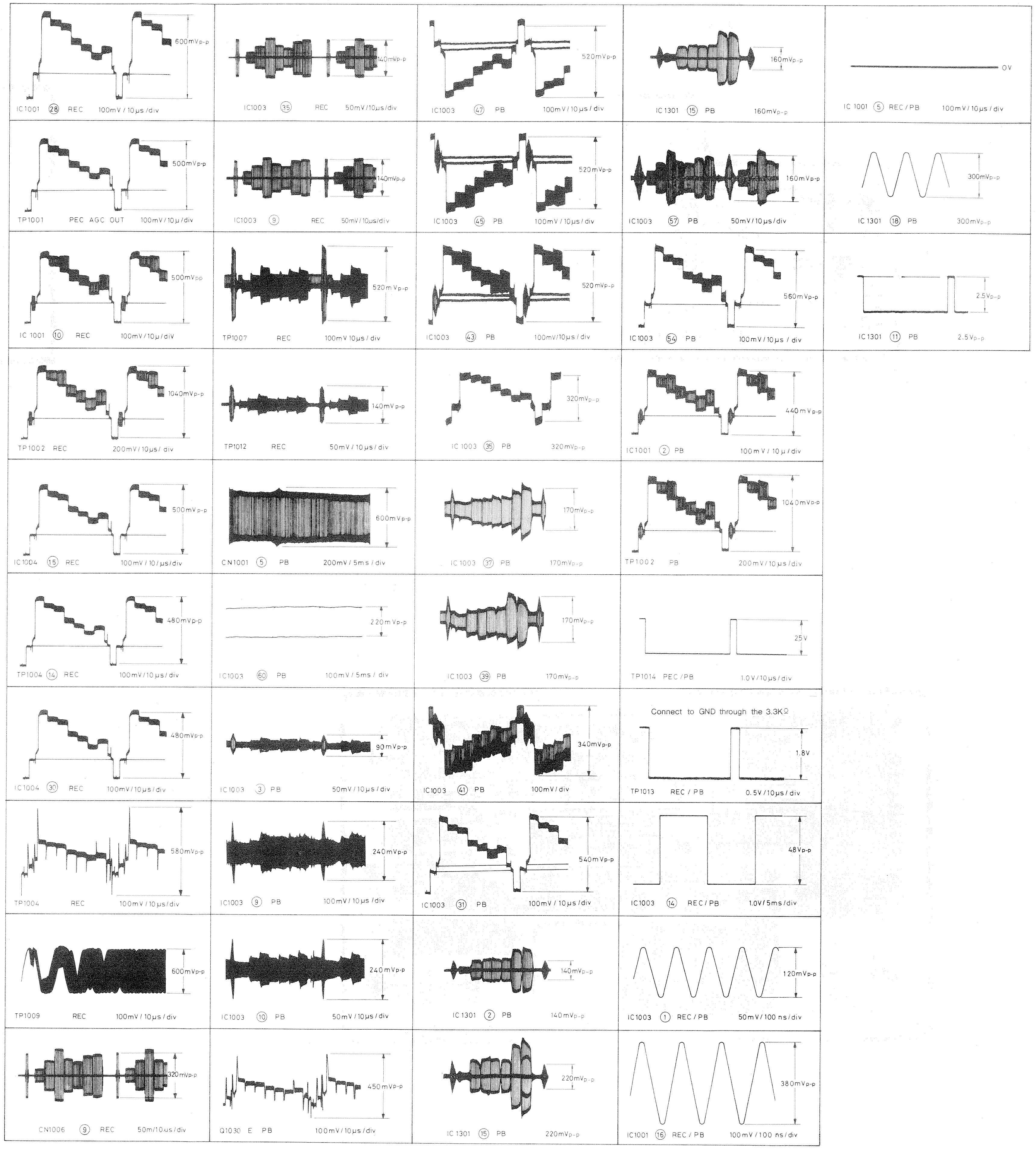

K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
TOP VF
CN1009
CN1008
IC2001
AUDIO-HIC
CN8501
4230F25550
GCMK-103X
CN1002
C1008
SVR1009
TP1010
TP1501
SVR1501
CN1007
IC1501
CXA1202
SVR1502
CN1001
IC1001
CXA1201Q
TP1014
TP1001
IC1004
TC4053BF
CN1003
TP1009
SVR1010
SVR1008
TP1006
SVR1007
X1002
TP1012
FR7 PAL VD1
SIDE-A
TP1008
SVR1006
IC1002
CXL1502M
SVR1002
IC1003
CXA1200Q
TP1007
TP1013
T1002
IC1301
CXA1203M
CN1004
CN1005
DC/DC CONVERTER
TP1003
SVR1011
TP1020
SVR1003
SVR1004
TP1004
X1001
SVR1005
C1076
TP1011
CN1006

VD-1 BOARD SIDE B

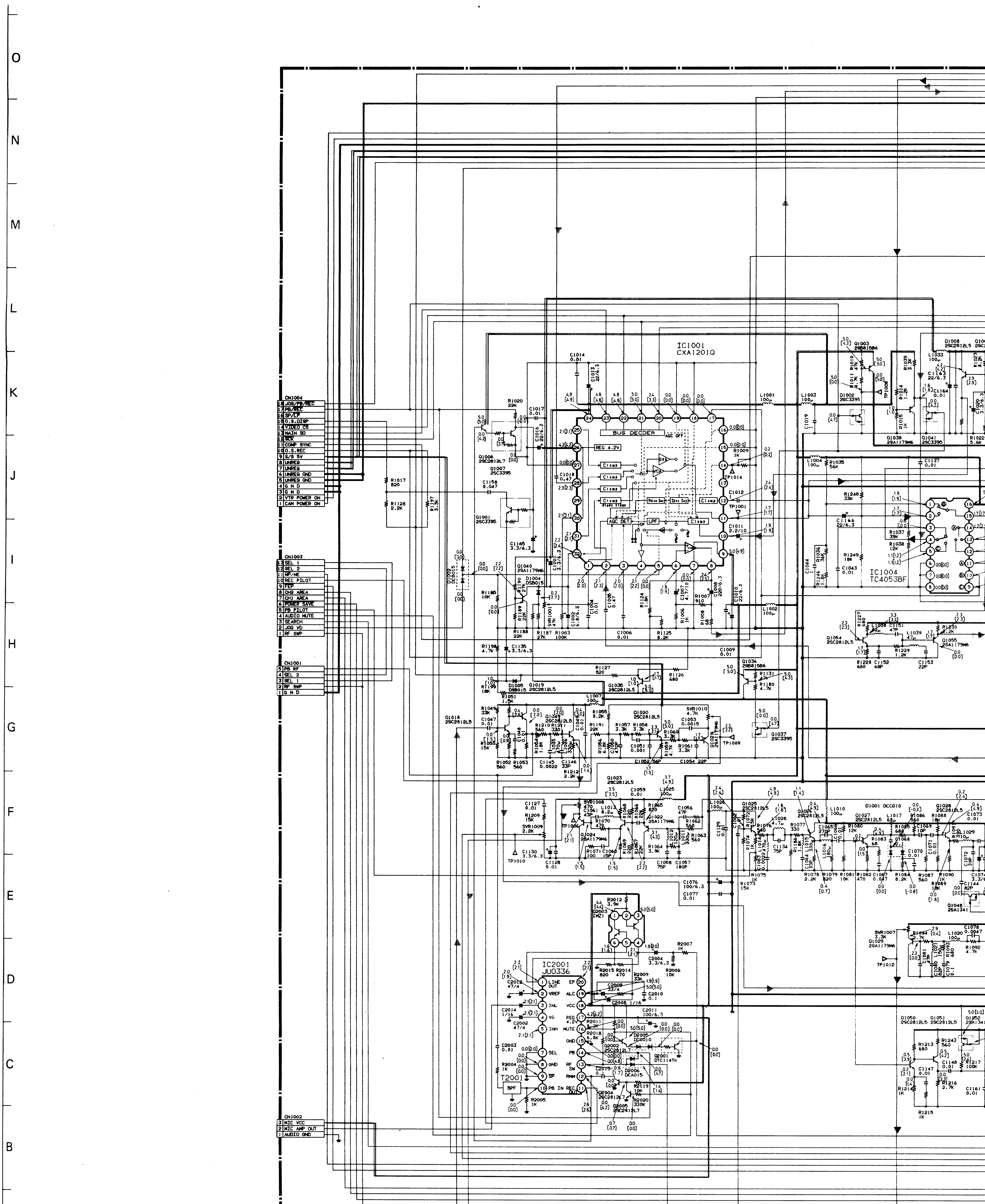

11
12
13
14
15
16
17



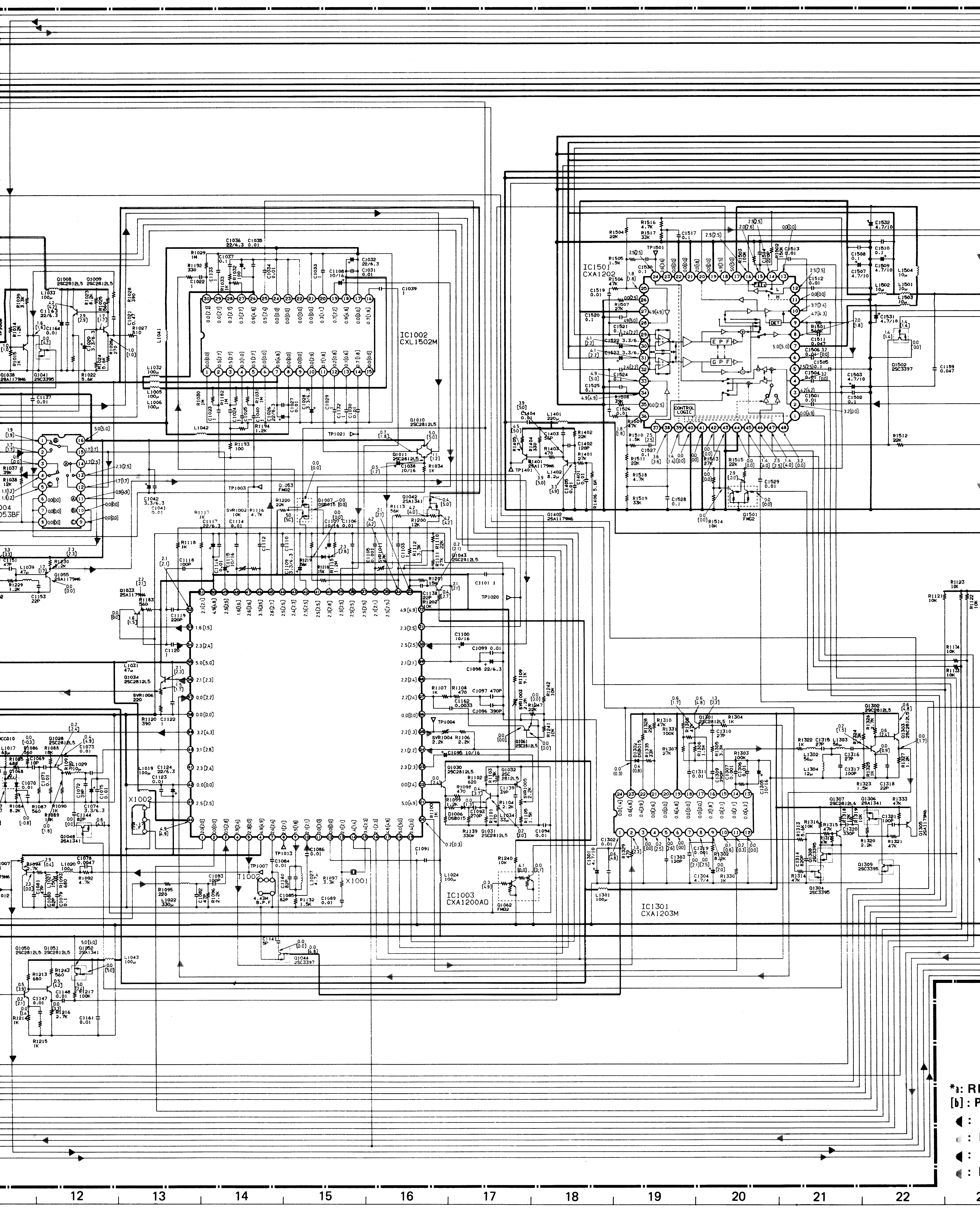
VD-1 BOARD (VIDEO/AUDIO)

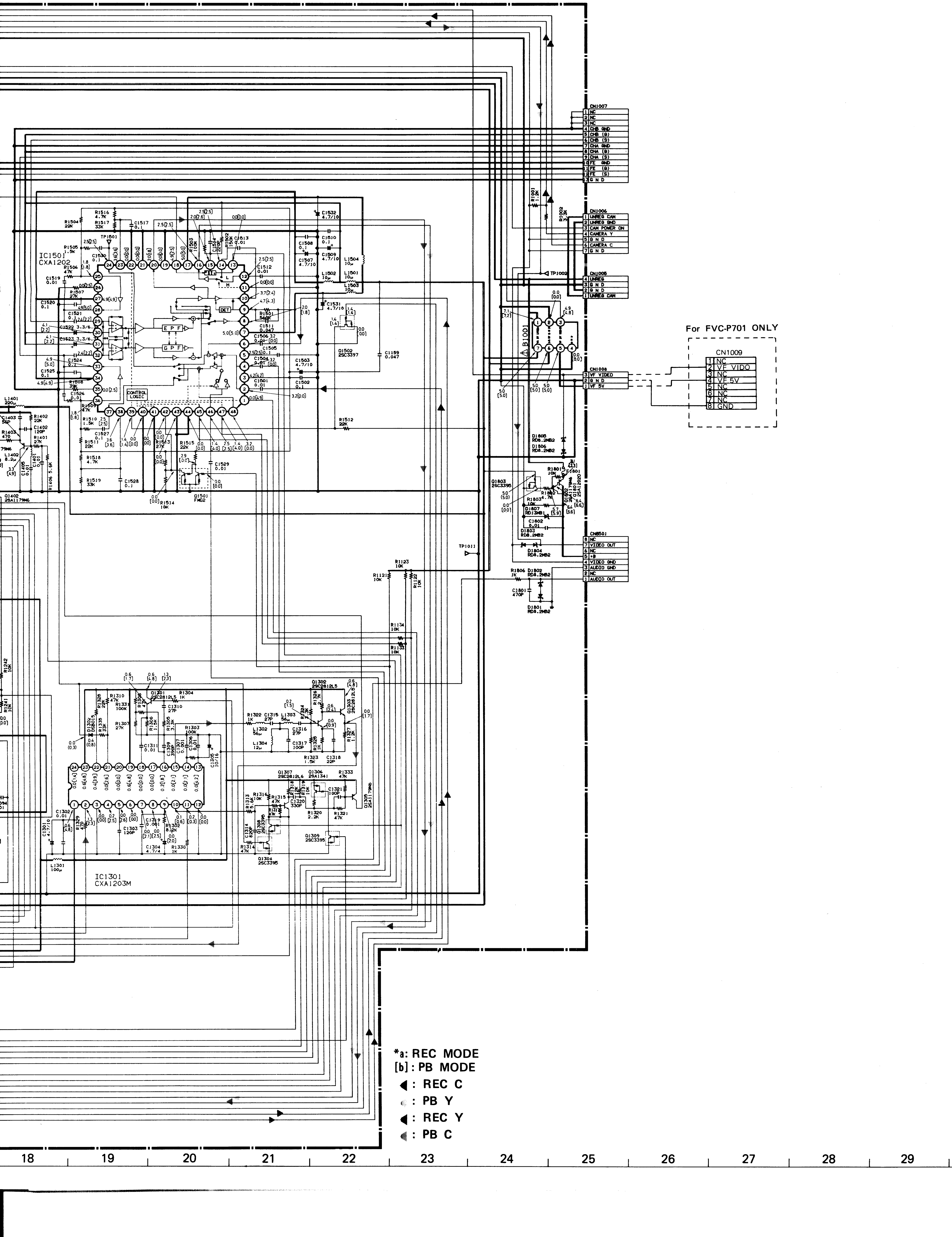


15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30


O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
IC1001
CXA1201Q
BUS DECODER
REG 4.2V
AGC OFF
Clamp
AGC DET
LPF
IC1004
TC4053BF
IC2001
JU0336
T2001
BPF
CN1004
18 JOG/PB/REC
17 PB/REC
16 SP/LP
15 O.S.DISP
14 VIDEO CS
13 MAIN SO
12 SCK
11 COMP SYNC
10 O.S.REC
9 S/S 5V
8 UNREG
7 UNREG
6 UNREG GND
5 UNREG GND
4 G N D
3 G N D
2 VTR POWER ON
1 CAM POWER ON
CN1003
13 SEL 1
12 SEL 2
11 MP/ME
10 REC PILOT
9 FEP
8 CH2 AREA
7 CH1 AREA
6 POWER SAVE
5 PB PILOT
4 AUDIO MUTE
3 SEARCH
2 JOG VD
1 RF SWP
CN1001
5 PB RF
4 SEL 2
3 SEL 1
2 RF SWP
1 G N D
CN1002
3 MIC VCC
2 MIC AMP OUT
1 AUDIO GND
Q1001 2SC3395
Q1006 2SC2812L7
Q1007 2SC3395
Q1040 2SA1179M6
D1004 DSB015
D1005 DSB015
Q1019 2SC2812L5
Q1018 2SC2812L5
Q1036 2SB1586
Q1037 2SC3395
Q1038 2SC2812L5
Q1020 2SC2812L5
Q1021 2SA1179M6
Q1023 2SC2812L5
Q1022 2SA1179M6
Q1024 2SA1179M6
Q1025 2SC2812L5
Q1026 2SC2812L5
Q1027 2SC2812L5
Q1028 2SC2812L5
D1001 DCC010
Q1003 2SB1586
D1002 DSB015
Q1008 2SC2812L5
Q1038 2SA1179M6
Q1041 2SC3395
Q1054 2SC2812L5
Q1055 2SA1179M6
Q1029 2SA1179M6
Q1048 2SA1341
Q1050 2SC2812L5
Q1051 2SC2812L5
Q2003 IMZ1
Q2001 DTC114TK
Q2002 2SC2812L7
Q2004 2SC2812L7
Q2005 2SC2812L7
D2005 DCC010
D2006 DCA015
SVR1001
SVR1008
SVR1009
SVR1010
SVR1007
TP1001
TP1006
TP1009
TP1010
TP1012
TP1014
LINE OUT
VREF
INL
VG
INH
SEL
GND
SP
PB IN REC
EP
ALC
VCC
REG 4.2V
MUTE
GND
PB
RF SW
RMH

VD-1 CIRCUIT


IC1002
CXL1502M
IC1501
CXA1202
IC1003
CXA1200AQ
IC1301
CXA1203M
CONTROL LOGIC
EPF
GPF
DET
X1002
X1001
T1002
4.43M
B.P.F
Q1008 2SC2812L5
Q1009 2SC2812L5
Q1010 2SC2812L5
Q1011 2SC2812L5
Q1033 2SA1179M6
Q1034 2SC2812L5
Q1042 2SA1341
Q1043 2SC2812L5
Q1044 2SC3397
Q1055 2SA1179M6
Q1061 2SC2812L5
Q1062 FMG2
Q1401 2SA1179M6
Q1402 2SA1179M6
Q1501 FMG2
Q1502 2SC3397
Q1301 2SC2812L5
Q1302 2SC2812L5
Q1303 2SC2812L5
Q1304 2SC3395
Q1305 2SA1179M6
Q1306 2SA1341
Q1307 2SC2812L6
Q1309 2SC3395
D1006 DS8015
D1907 DS8015
TP1003
TP1004
TP1007
TP1013
TP1020
TP1021
TP1401
TP1501
*a: RI
[b]: P
12
13
14
15
16
17
18
19
20
21
22


IC1501
CXA1202
CONTROL LOGIC
EPF
GPF
DET
IC1301
CXA1203M
CN1007
1 NC
2 NC
3 NC
4 CHB GND
5 CHB (G)
6 CHB (S)
7 CHA GND
8 CHA (G)
9 CHA (S)
10 FE GND
11 FE (G)
12 FE (S)
13 G N D
CN1006
1 UNREG CAM
2 UNREG GND
3 CAM POWER ON
4 CAMERA Y
5 G N D
6 CAMERA C
7 G N D
CN1005
4 UNREG
3 G N D
2 G N D
1 UNREG CAM
TP1002
B1001
CN1008
3 VF VIDEO
2 G N D
1 VF 5V
For FVC-P701 ONLY
CN1009
1 NC
2 VF VIDO
3 NC
4 VF 5V
5 NC
6 NC
7 NC
8 GND
CN8501
8 NC
7 VIDEO OUT
6 NC
5 +B
4 VIDEO GND
3 AUDIO GND
2 NC
1 AUDIO OUT
TP1011
Q1501 FMG2
Q1502 2SC3397
Q1402 2SA1179M6
Q1801 2SA1202O
Q1802 2SA1179M6
Q1803 2SC3395
Q1301 2SC2812L5
Q1302 2SC2812L5
Q1303 2SC2812L5
Q1304 2SC3395
Q1305 2SA1179M6
Q1306 2SA1341
Q1307 2SC2812L6
Q1308 2SC3395
Q1309 2SC3395
D1801 RD8.2MB2
D1802 RD8.2MB2
D1803 RD8.2MB2
D1804 RD8.2MB2
D1805 RD8.2MB2
D1806 RD8.2MB2
D1807 RD13MB1
D1301 DS8015
F1801
*a: REC MODE
[b] : PB MODE
◀ : REC C
◀ : PB Y
◀ : REC Y
◀ : PB C
18
19
20
21
22
23
24
25
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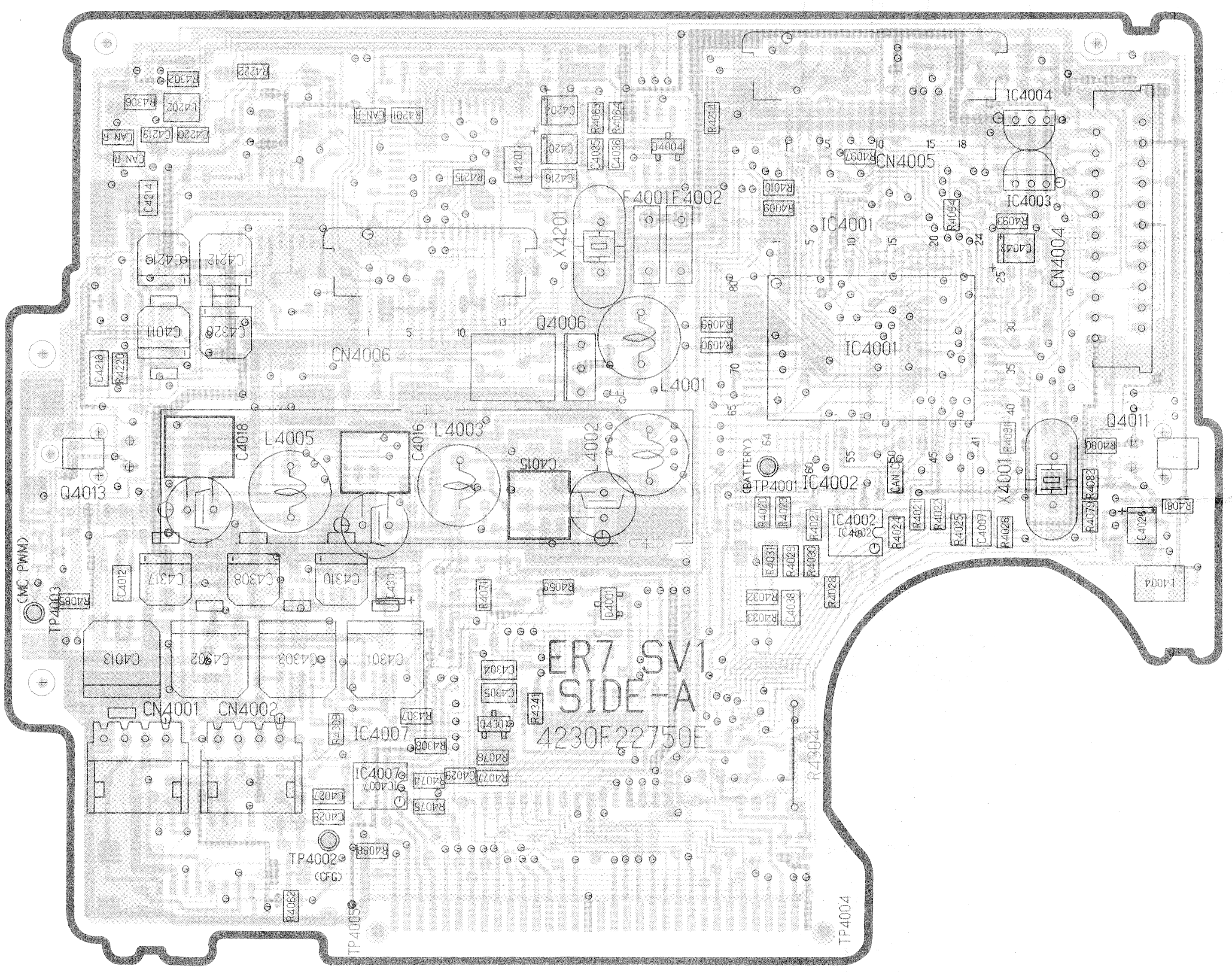
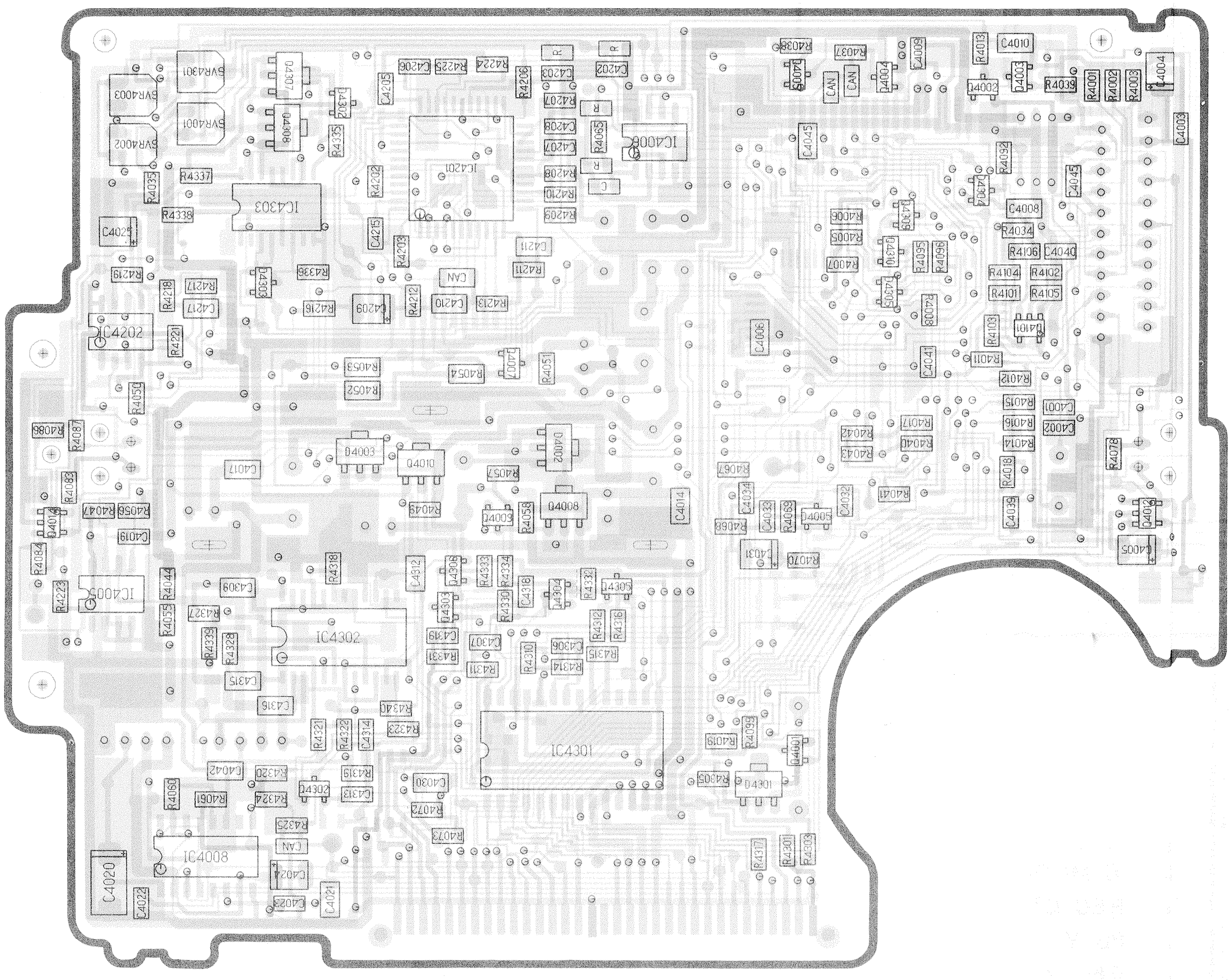
29

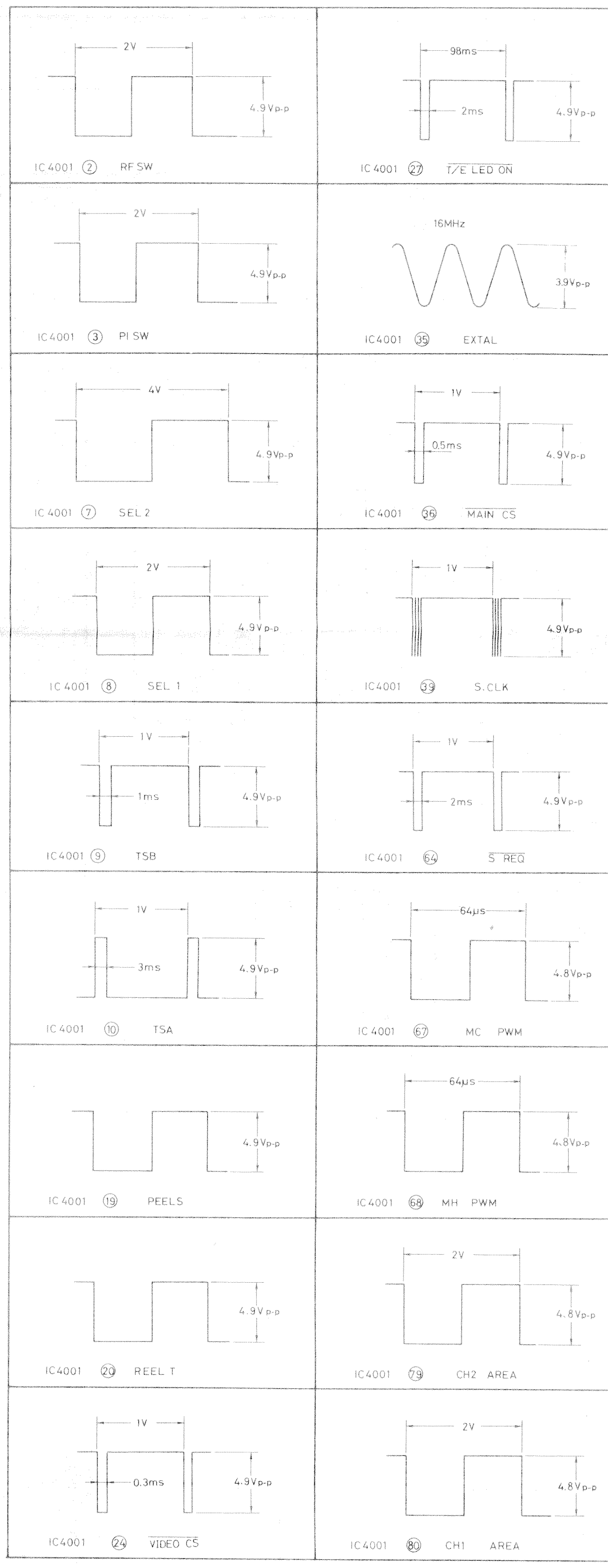
SV-1 BOARD SIDE A


ER7 SV1
SIDE-A
4230F22750E
TP4001
BATTERY
TP4002
(CFG)
TP4003
(MC PWM)
TP4004
TP4005
IC4001
IC4002
IC4003
IC4004
IC4007
CN4001
CN4002
CN4004
CN4005
CN4006
X4001
X4201
L4001
L4003
L4004
L4005
Q4006
Q4011
Q4013
F4001
F4002
R4304

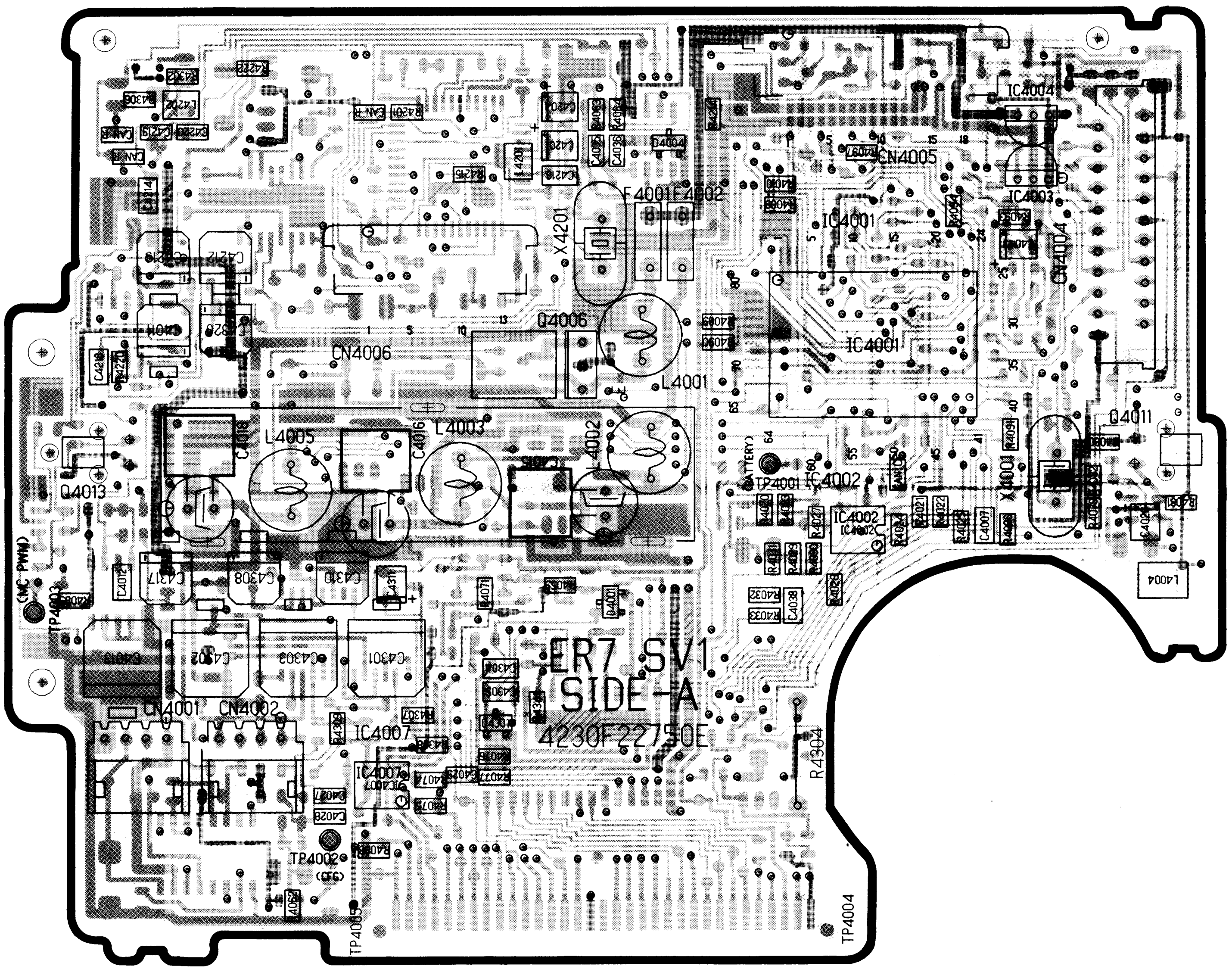
SV-1 BOARD SIDE B


IC4001
IC4008
IC4201
IC4301
IC4302
IC4303
SVR4001
SVR4002
SVR4003
SVR4301
C4020

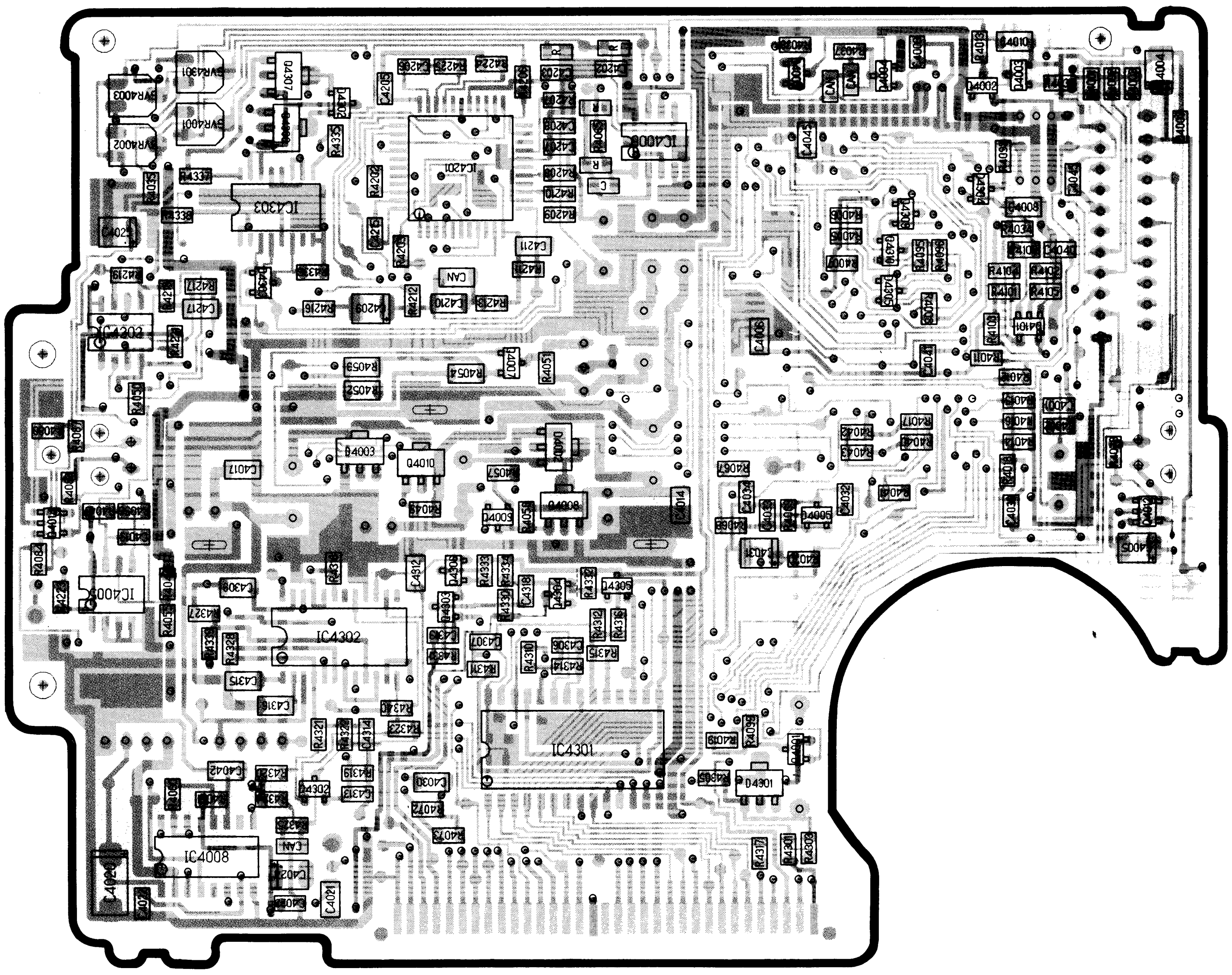
SV-1 BOARD (SERVO)



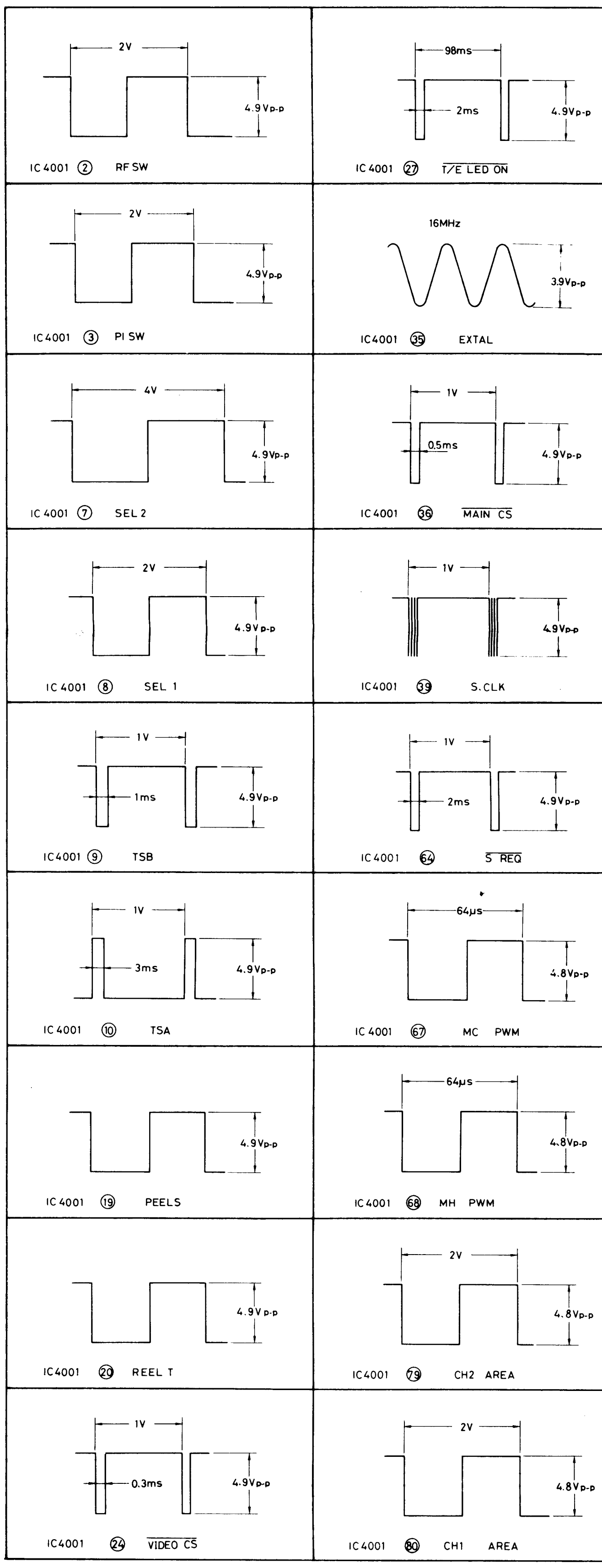
SV-1 BOARD SIDE A


ER7 SV1
SIDE-A
4230F22750E
IC4001
IC4002
IC4003
IC4004
IC4007
CN4001
CN4002
CN4004
CN4005
CN4006
L4001
L4003
L4005
X4001
X4201
Q4006
Q4011
Q4013
TP4001
TP4002 (CFG)
TP4003 (MC PWM)
TP4004
TP4005
F4001
F4002
R4304
(BATTERY)

SV-1 BOARD SIDE B

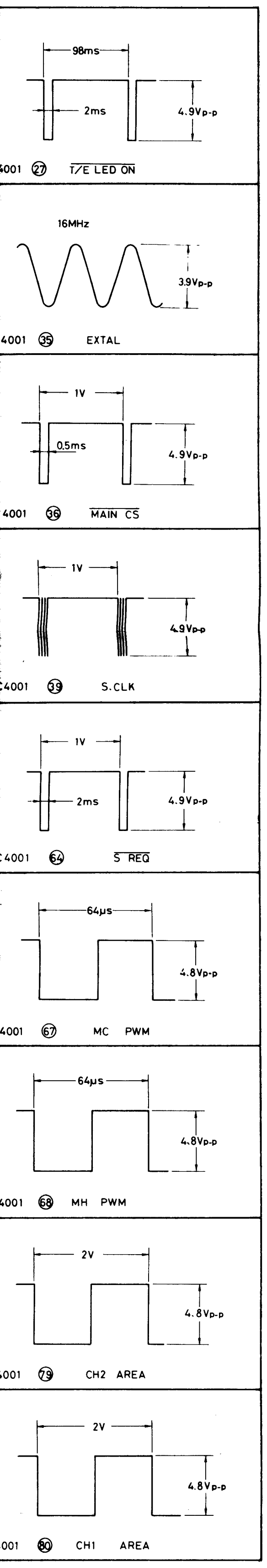

IC4201
IC4301
IC4302
IC4303
IC4008
IC4005
Q4003
Q4010
Q4301
VR4001
VR4002
VR4003
VR4301
CAN

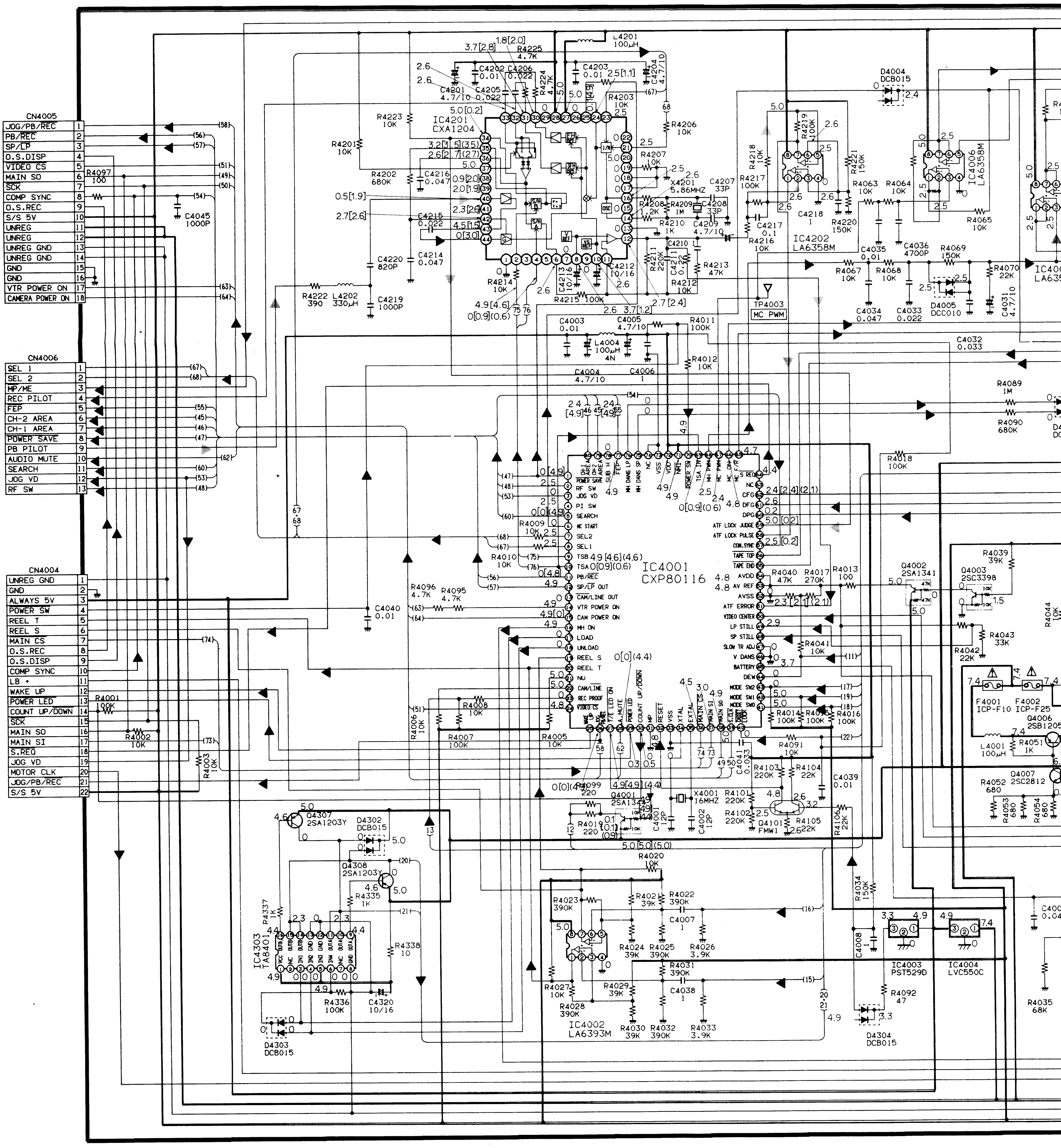
SV-1 BOARD (SERVO)



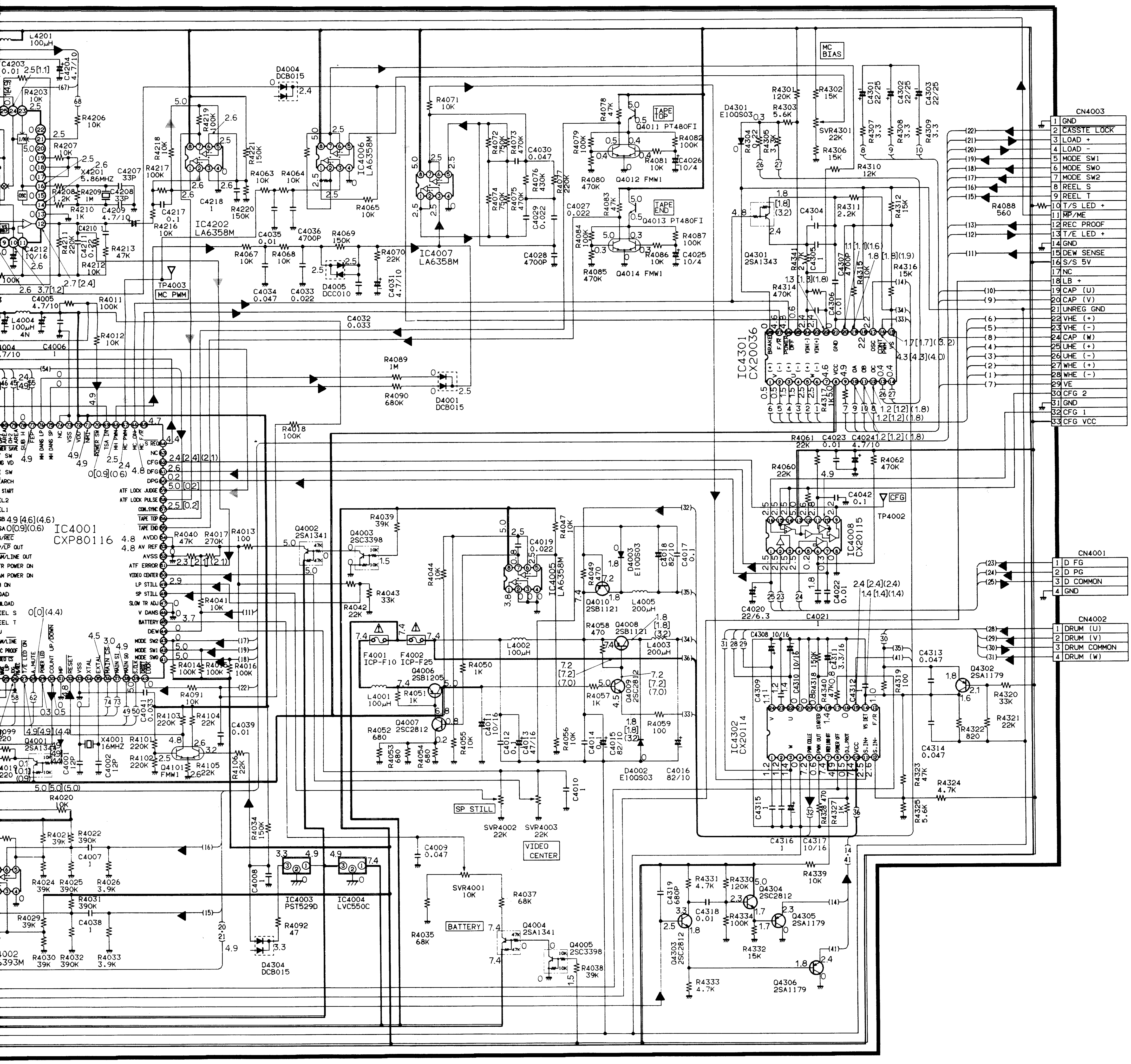
O
N
M
L
K
J
I
H
G
F
E
D
C
B
A

1 2 3 4 5 6 7 8 9 10 11 12


98ms
2ms
4.9Vp-p
4001 ㉗ T/E LED ON
16MHz
3.9Vp-p
4001 ㉟ EXTAL
1V
0.5ms
4.9Vp-p
4001 ㊱ MAIN CS
1V
4.9Vp-p
C4001 ㊴ S.CLK
1V
2ms
4.9Vp-p
C4001 (64) S REQ
64μs
4.8Vp-p
4001 (67) MC PWM
64μs
4.8Vp-p
4001 (68) MH PWM
2V
4.8Vp-p
4001 (79) CH2 AREA
2V
4.8Vp-p
4001 (80) CH1 AREA


CN4005
JOG/PB/REC 1
PB/REC 2
SP/LP 3
O.S.DISP 4
VIDEO CS 5
MAIN SO 6
SCK 7
COMP SYNC 8
O.S.REC 9
S/S 5V 10
UNREG 11
UNREG 12
UNREG GND 13
UNREG GND 14
GND 15
GND 16
VTR POWER ON 17
CAMERA POWER ON 18
CN4006
SEL 1 1
SEL 2 2
MP/ME 3
REC PILOT 4
FEP 5
CH-2 AREA 6
CH-1 AREA 7
POWER SAVE 8
PB PILOT 9
AUDIO MUTE 10
SEARCH 11
JOG VD 12
RF SW 13
CN4004
UNREG GND 1
GND 2
ALWAYS 5V 3
POWER SW 4
REEL T 5
REEL S 6
MAIN CS 7
O.S.REC 8
O.S.DISP 9
COMP SYNC 10
LB + 11
WAKE UP 12
POWER LED 13
COUNT UP/DOWN 14
SCK 15
MAIN SO 16
MAIN SI 17
S.REQ 18
JOG VD 19
MOTOR CLK 20
JOG/PB/REC 21
S/S 5V 22
IC4201
CXA1204
L4201 100μH
R4225 4.7K
R4224 4.7K
R4223 10K
R4201 10K
R4202 680K
C4216 0.047
C4215 0.022
C4220 820P
C4214 0.047
R4222 390
L4202 330μH
C4219 1000P
C4045 1000P
R4097 100
X4201 5.86MHZ
C4207 33P
C4208 33P
R4209 1M
R4208 1.2K
R4210 1K
C4209 4.7/10
R4213 47K
R4212 10K
R4214 10K
R4215 100K
TP4003
MC PWM
IC4001
CXP80116
C4003 0.01
C4005 4.7/10
L4004 100μH
R4011 100K
R4012 10K
C4004 4.7/10
C4006 1
R4009 10K
R4010 10K
R4096 4.7K
R4095 4.7K
C4040 0.01
R4008 10K
R4006 10K
R4007 100K
R4005 10K
R4001 100K
R4002 10K
R4003 10K
R4099 220
Q4001 2SA1344
R4019 220
X4001 16MHZ
C4002 12P
C4001 12P
R4101 220K
R4102 220K
R4103 220K
R4104 22K
R4105 22K
Q4101 FMW1
R4106 22K
C4039 0.01
R4091 10K
R4014 100K
R4015 100K
R4016 100K
R4040 47K
R4017 270K
R4013 100
R4041 10K
R4018 100K
Q4002 2SA1341
Q4003 2SC3398
R4039 39K
R4042 22K
R4043 33K
F4001 ICP-F10
F4002 ICP-F25
Q4006 2SB1205
L4001 100μH
R4051 1K
Q4007 2SC2812
R4052 680
R4053 680
R4054 680
R4020 10K
R4021 39K
R4022 390K
R4023 390K
C4007 1
R4024 39K
R4025 390K
R4026 3.9K
R4027 10K
R4028 390K
R4029 39K
R4031 390K
C4038 1
R4030 39K
R4032 390K
R4033 3.9K
IC4002
LA6393M
R4034 150K
C4008
IC4003 PST529D
IC4004 LVC550C
R4092 47
D4304 DCB015
R4035 68K
Q4307 2SA1203Y
D4302 DCB015
Q4308 2SA1203Y
R4335 1K
R4337 1K
R4338 10
IC4303
TA8401
R4336 100K
C4320 10/16
D4303 DCB015
D4004 DCB015
R4218 10K
R4219 100K
R4221 150K
R4217 100K
C4217 0.1
R4216 10K
C4218 1
R4220 150K
IC4202 LA6358M
IC4006 LA6358M
R4063 10K
R4064 10K
R4065 10K
C4035 0.01
C4036 4700P
R4069 150K
R4067 10K
R4068 10K
R4070 22K
D4005 DCC010
C4034 0.047
C4033 0.022
C4031 4.7/10
C4032 0.033
R4089 1M
R4090 680K
R4044 10K
11
12
13
14
15
16
17
18
19
20
21
22

SV-1 CIRCUIT

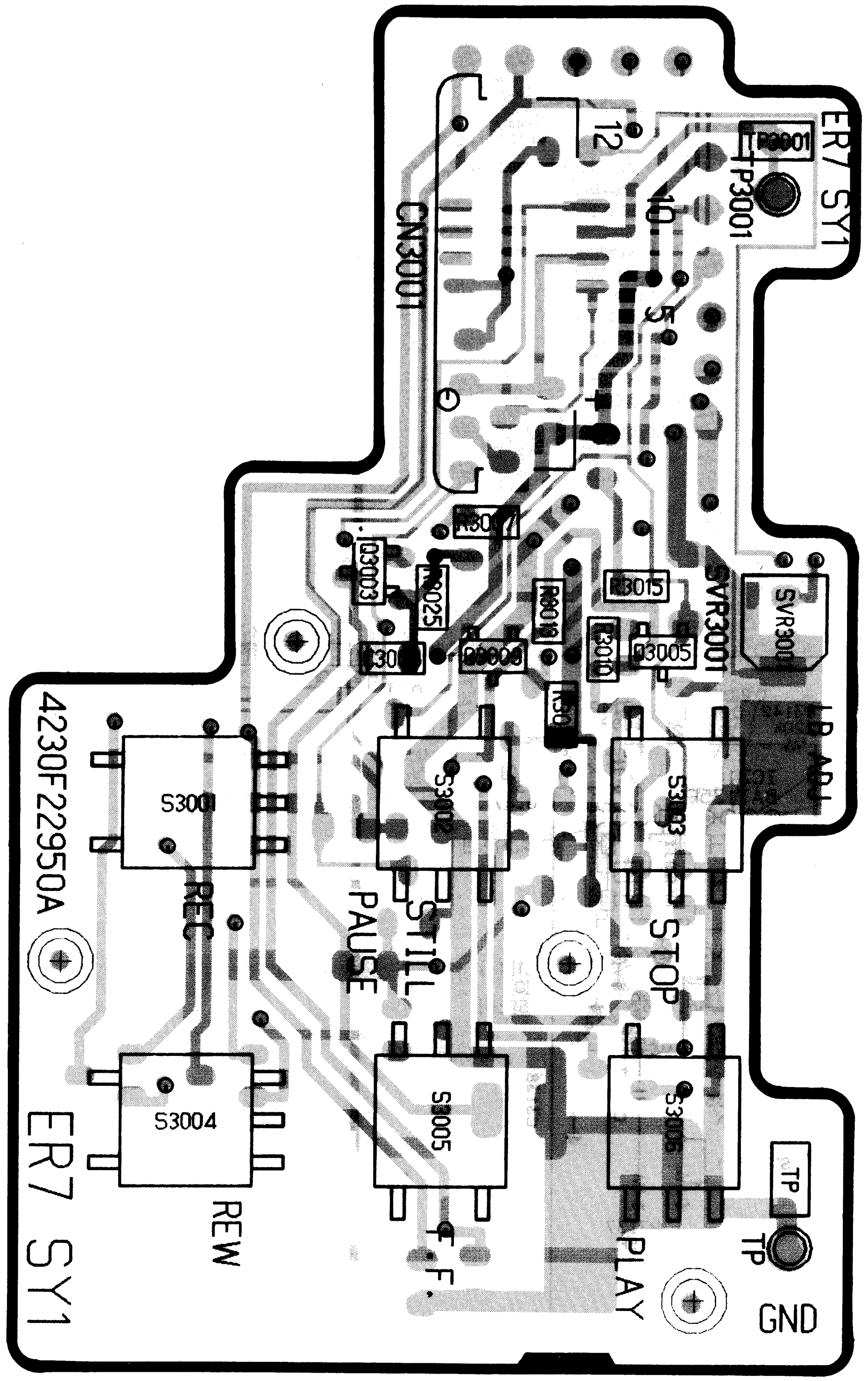

IC4001 CXP80116
IC4202 LA6358M
IC4006 LA6358M
IC4007 LA6358M
IC4005 LA6358M
IC4301 CX20036
IC4302 CX20114
IC4008 CX20115
IC4003 PST529D
IC4004 LVC550C
IC4002
TP4003 MC PWM
TP4002 CFG
MC BIAS
TAPE TOP
TAPE END
SP STILL
VIDEO CENTER
BATTERY
X4201 5.86MHZ
X4001 16MHZ
F4001 ICP-F10
F4002 ICP-F25
CN4003
1 GND
2 CASSTE LOCK
3 LOAD +
4 LOAD -
5 MODE SW1
6 MODE SW0
7 MODE SW2
8 REEL S
9 REEL T
10 T/S LED +
11 MP/ME
12 REC PROOF
13 T/E LED +
14 GND
15 DEW SENSE
16 S/S 5V
17 NC
18 LB +
19 CAP (U)
20 CAP (V)
21 UNREG GND
22 VHE (+)
23 VHE (-)
24 CAP (W)
25 UHE (+)
26 UHE (-)
27 WHE (+)
28 WHE (-)
29 VE
30 CFG 2
31 GND
32 CFG 1
33 CFG VCC
CN4001
1 D FG
2 D PG
3 D COMMON
4 GND
CN4002
1 DRUM (U)
2 DRUM (V)
3 DRUM COMMON
4 DRUM (W)

*a: REC MODE
[b]: PB MODE
(c): CUE MODE

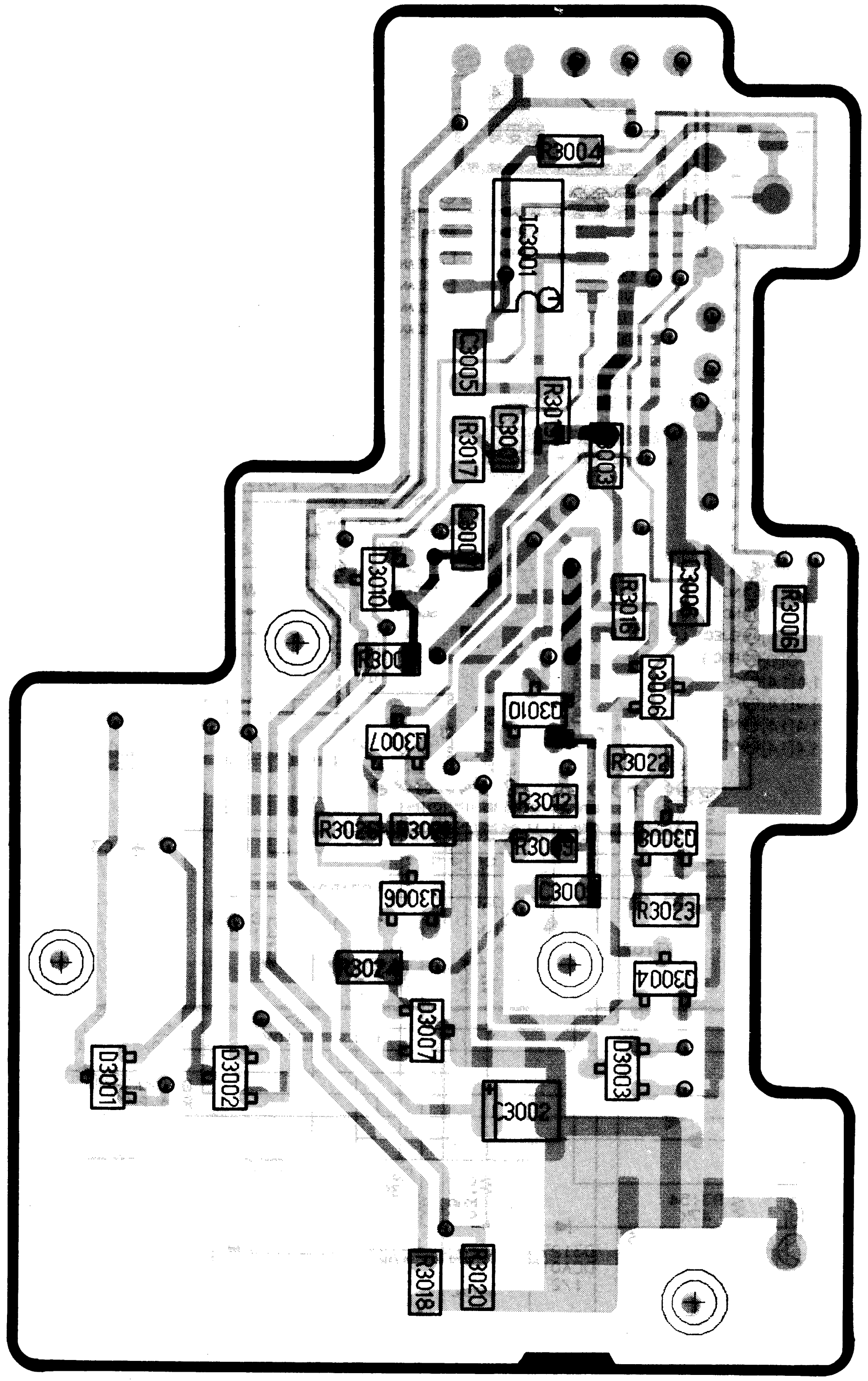
▶ : ATF signal
▶ : Drum servo signal
: Capstan servo signal
▶ : Other signal

19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29

SV-1 BOARD SIDE A


CN3001
12
10
5
1
TP3001
TP3001
ER7 SY1
R3007
D3003
R3025
R3015
R3019
R3008
R3005
SVR3001
SVR3001
LB ADJ
S3001
S3002
S3003
REC
STILL
PAUSE
STOP
4230F22950A
S3004
S3005
S3006
REW
F.F.
PLAY
TP
TP
GND
ER7 SY1

SY-1 BOARD SIDE B


R3004
IC3001
C3005
R3017
D3010
R3019
R3006
D3006
D3010
D3007
R3022
R3012
R3023
D3008
D3006
R3024
D3004
D3007
D3001
D3002
D3003
C3002
R3018
R3020

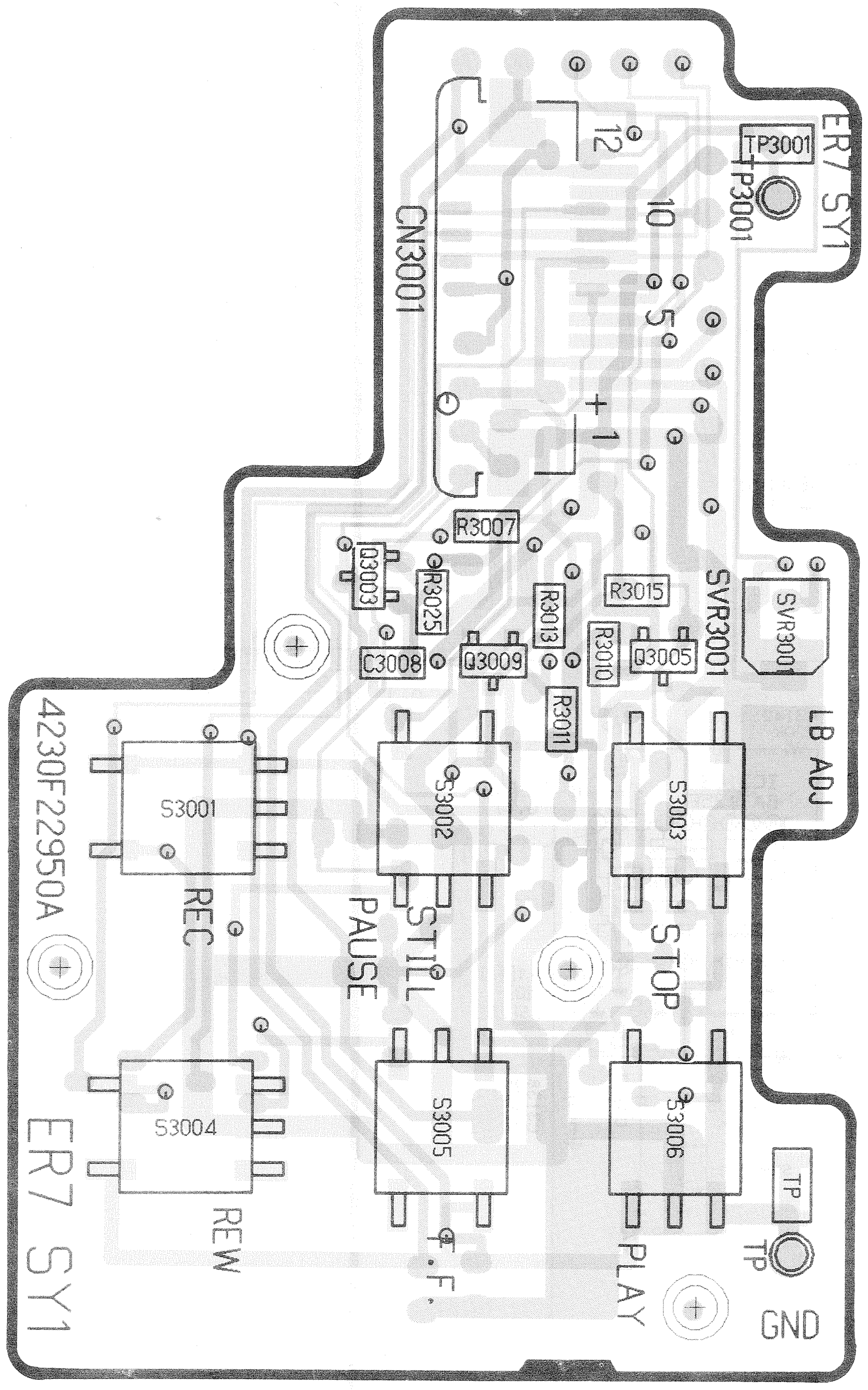
CN300

UNREG
GND
ALWAYS
VDD
$\overline{\text{INITIAL}}$
LB +
NC
SCAN (
SCAN (
SCAN (
SCAN I
SCAN I

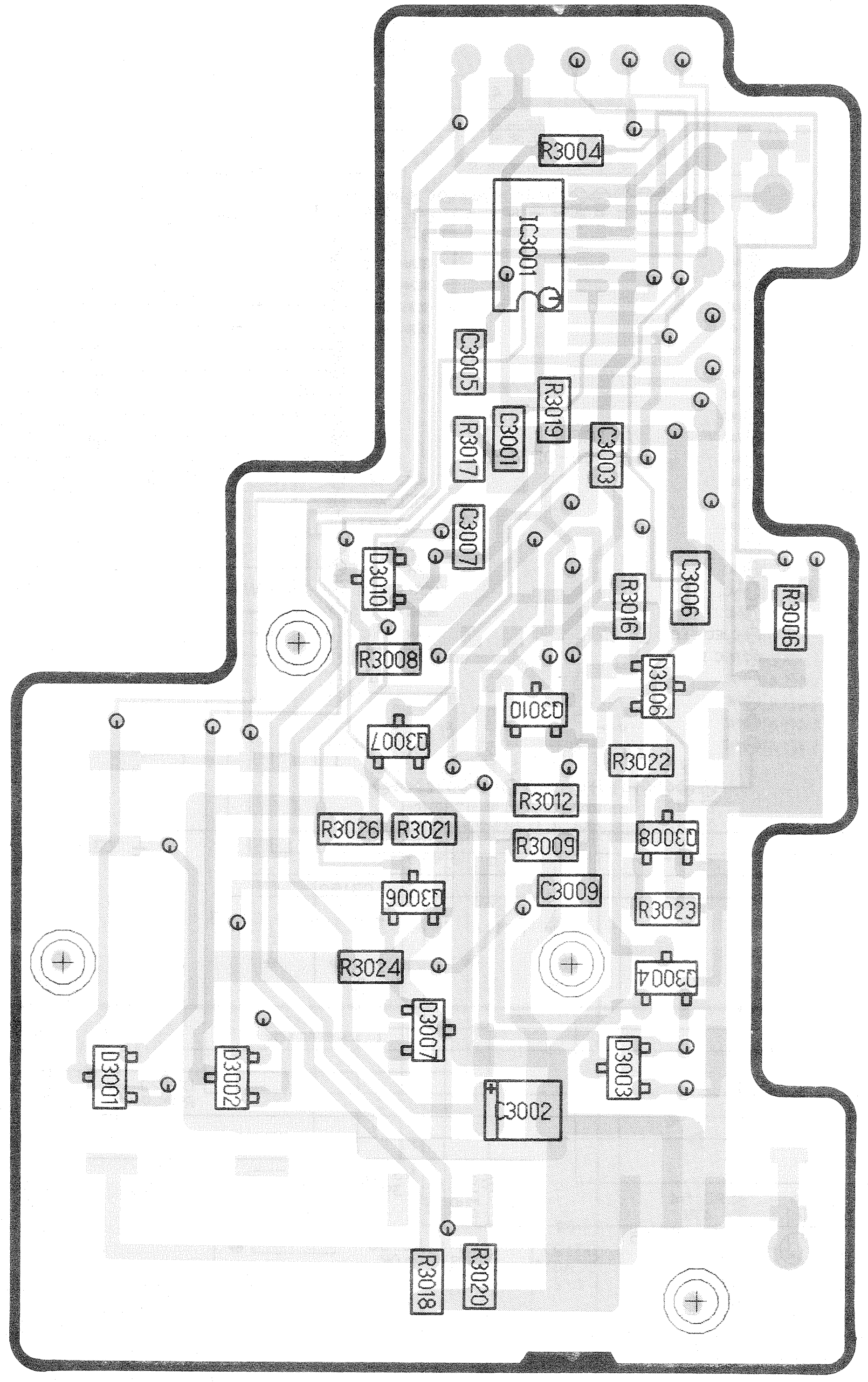
K
J
I
H
G
F
E
D
C
B
A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

SV-1 BOARD SIDE A

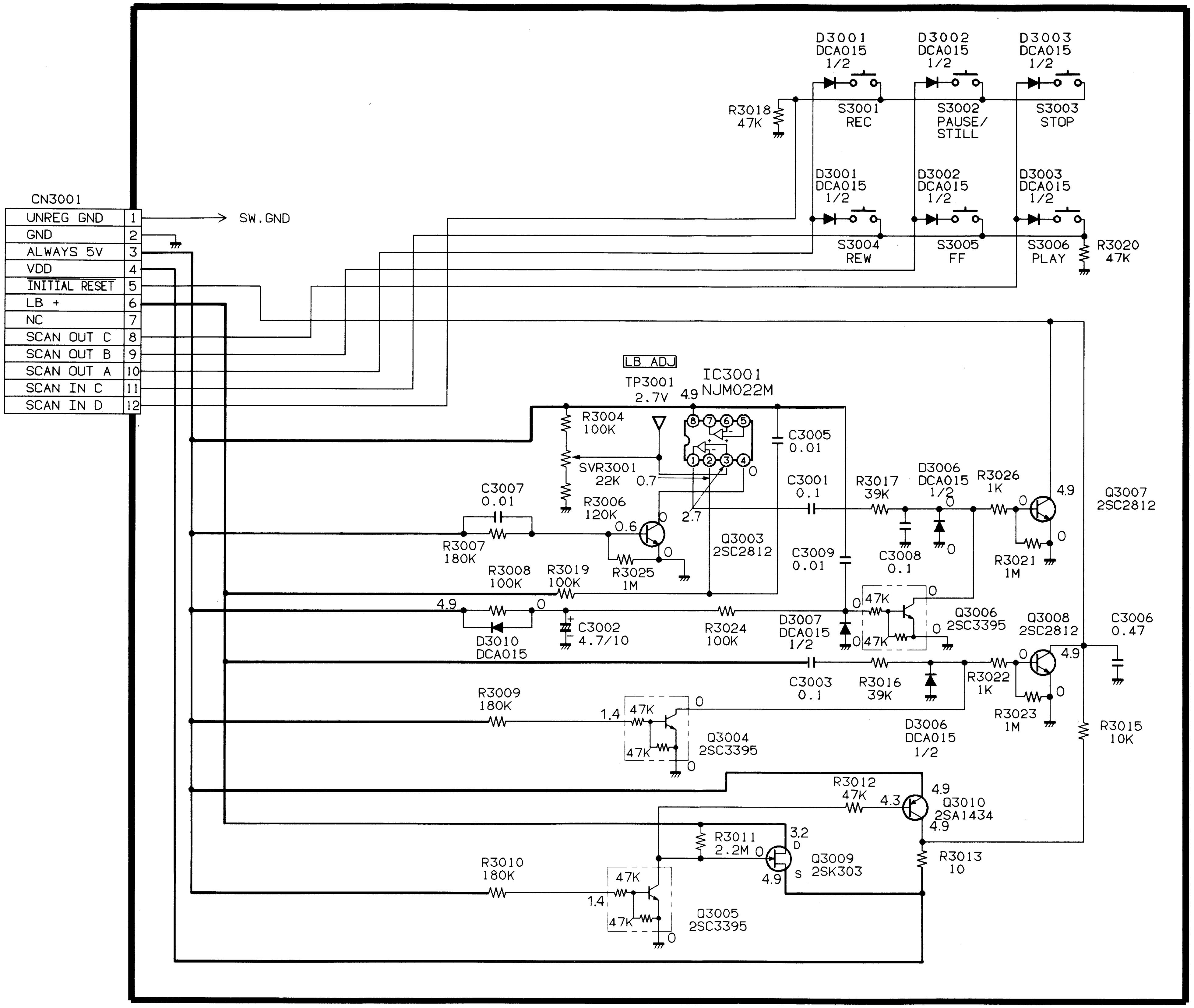

ER7 SY1
TP3001
TP3001
12
10
5
1
CN3001
R3007
Q3003
R3025
R3013
R3015
SVR3001
SVR3001
C3008
Q3009
R3010
Q3005
R3011
LB ADJ
4230F22950A
S3001
S3002
S3003
REC
STILL
PAUSE
STOP
S3004
S3005
S3006
TP
TP
REW
F.F.
PLAY
GND
ER7 SY1

SY-1 BOARD SIDE B


R3004
IC3001
C3005
R3019
R3017
C3001
C3003
C3007
D3010
R3016
C3006
R3006
R3008
D3006
Q3010
Q3007
R3022
R3012
R3026
R3021
R3009
Q3008
Q3006
C3009
R3023
R3024
Q3004
D3007
D3001
D3002
D3003
C3002
R3018
R3020

CN30
UNREG
GND
ALWAY
VDD
INITIA
LB +
NC
SCAN
SCAN
SCAN
SCAN
SCAN

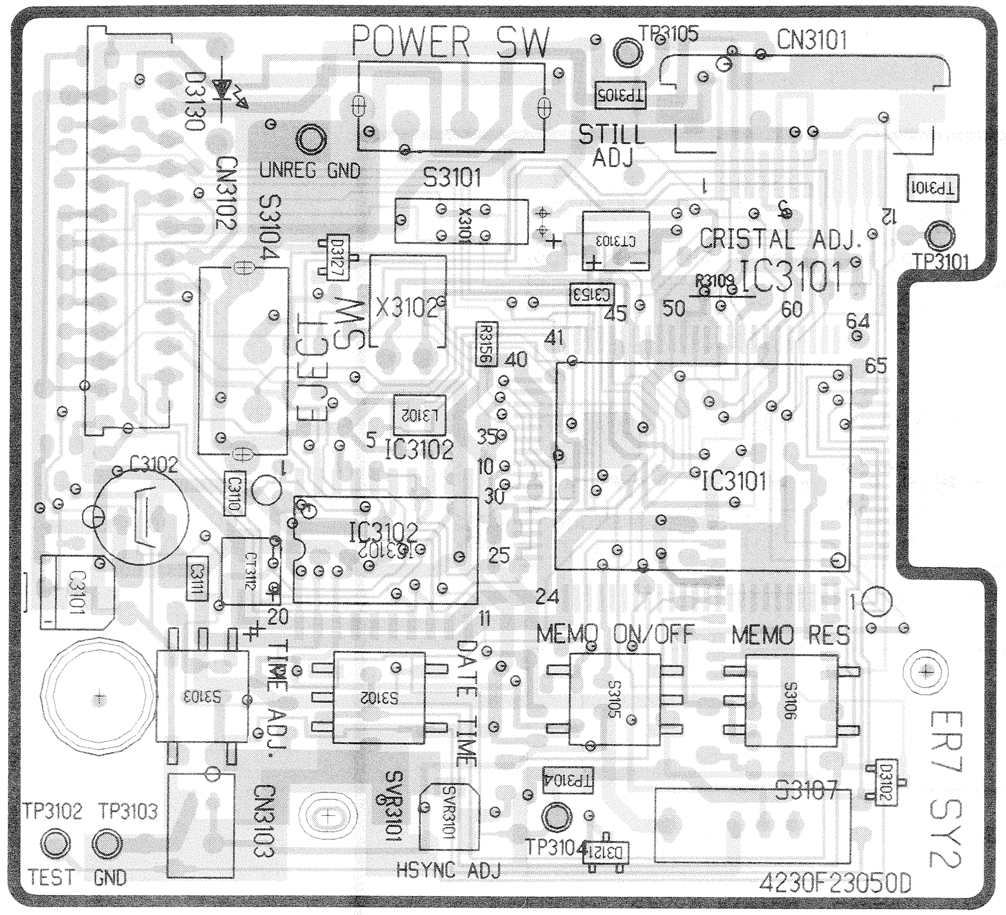
SY-1 CIRCUIT


CN3001
UNREG GND 1
GND 2
ALWAYS 5V 3
VDD 4
INITIAL RESET 5
LB + 6
NC 7
SCAN OUT C 8
SCAN OUT B 9
SCAN OUT A 10
SCAN IN C 11
SCAN IN D 12
SW.GND
D3001 DCA015 1/2
D3002 DCA015 1/2
D3003 DCA015 1/2
R3018 47K
S3001 REC
S3002 PAUSE/ STILL
S3003 STOP
S3004 REW
S3005 FF
S3006 PLAY
R3020 47K
LB ADJ
TP3001 2.7V
IC3001 NJM022M
4.9
R3004 100K
SVR3001 22K
0.7
R3006 120K
C3005 0.01
C3007 0.01
R3007 180K
0.6
2.7
Q3003 2SC2812
R3008 100K
R3019 100K
R3025 1M
C3001 0.1
R3017 39K
D3006 DCA015 1/2
R3026 1K
Q3007 2SC2812
C3009 0.01
C3008 0.1
R3021 1M
D3010 DCA015
C3002 4.7/10
R3024 100K
D3007 DCA015 1/2
47K
Q3006 2SC3395
Q3008 2SC2812
C3006 0.47
C3003 0.1
R3016 39K
R3022 1K
R3023 1M
R3009 180K
1.4
Q3004 2SC3395
D3006 DCA015 1/2
R3015 10K
R3012 47K
4.3
Q3010 2SA1434
R3011 2.2M
3.2
Q3009 2SK303
R3013 10
R3010 180K
Q3005 2SC3395

*a:REC MODE

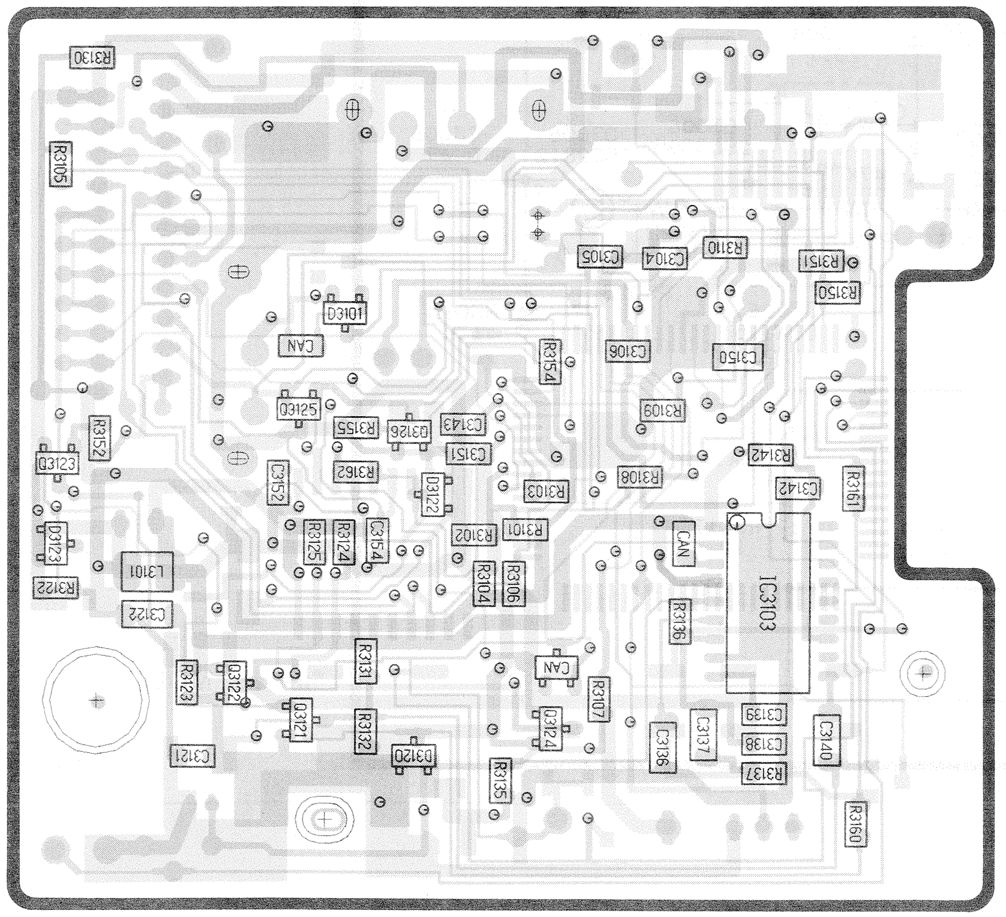
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

SY-2 BOARD SIDE A



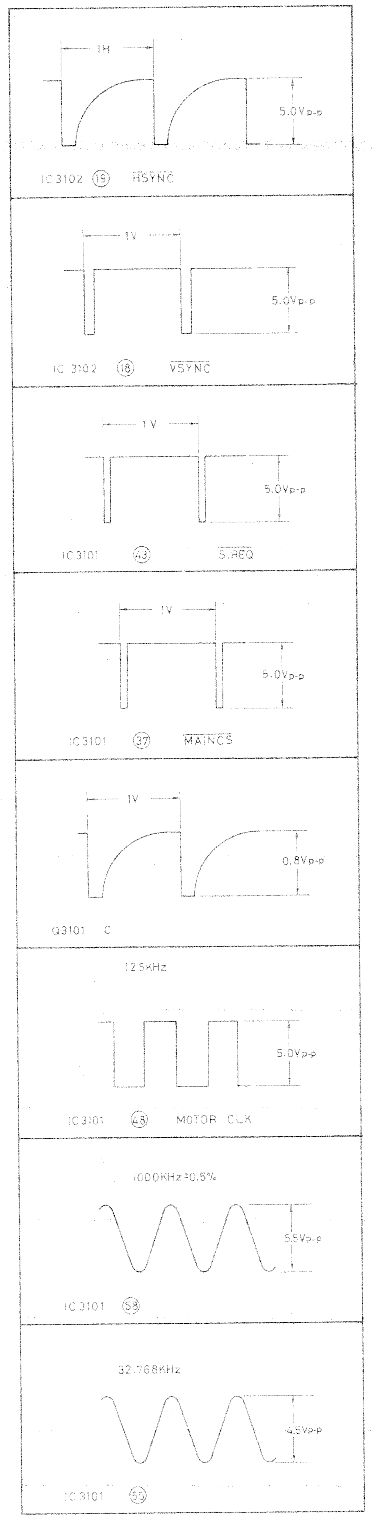
POWER SW
TP3105
CN3101
D3130
UNREG GND
S3101
STILL ADJ
TP3101
CN3102
S3104
X3102
EJECT SW
CRISTAL ADJ.
IC3101
IC3102
C3102
C3101
TIME ADJ.
DATE TIME
MEMO ON/OFF
MEMO RES
S3103
S3102
S3105
S3106
S3107
D3102
TP3104
CN3103
SVR3101
HSYNC ADJ
TP3102 TP3103
TEST GND
ER7 SY2
4230F23050D

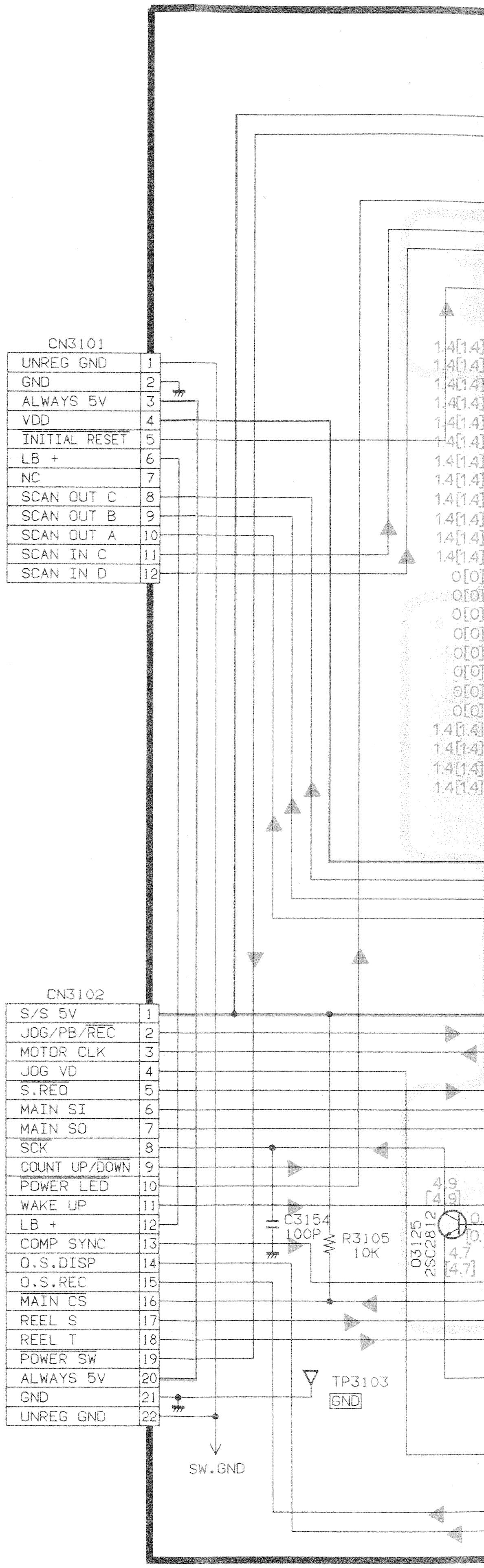
SY-2 BOARD SIDE B



R3130
R3105
D3101
IC3103
L3101
Q3123
Q3121
Q3122
D3120
R3123
C3121
R3122
R3160
R3161

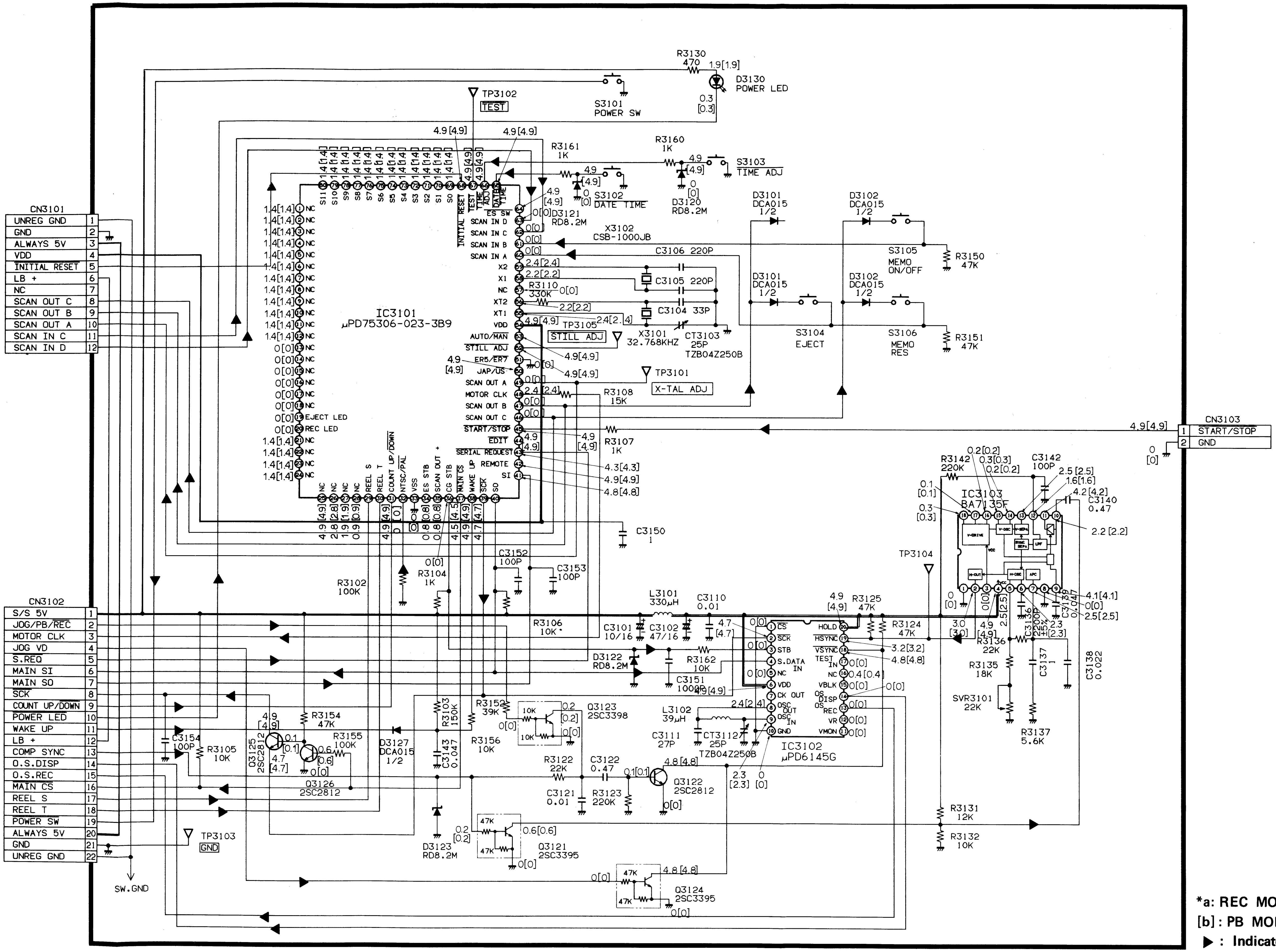
SY-2 BOARD (SYSTEM CONTROL)





CN3101
UNREG GND 1
GND 2
ALWAYS 5V 3
VDD 4
INITIAL RESET 5
LB + 6
NC 7
SCAN OUT C 8
SCAN OUT B 9
SCAN OUT A 10
SCAN IN C 11
SCAN IN D 12
CN3102
S/S 5V 1
JOG/PB/REC 2
MOTOR CLK 3
JOG VD 4
S.REQ 5
MAIN SI 6
MAIN SO 7
SCK 8
COUNT UP/DOWN 9
POWER LED 10
WAKE UP 11
LB + 12
COMP SYNC 13
O.S.DISP 14
O.S.REC 15
MAIN CS 16
REEL S 17
REEL T 18
POWER SW 19
ALWAYS 5V 20
GND 21
UNREG GND 22
C3154 100P
R3105 10K
Q3125 2SC2812
TP3103 GND
SW.GND

SY-2 CIRCUIT



CN3101
UNREG GND
GND
ALWAYS 5V
VDD
INITIAL RESET
LB +
NC
SCAN OUT C
SCAN OUT B
SCAN OUT A
SCAN IN C
SCAN IN D
CN3102
S/S 5V
JOG/PB/REC
MOTOR CLK
JOG VD
S.REQ
MAIN SI
MAIN SO
SCK
COUNT UP/DOWN
POWER LED
WAKE UP
LB +
COMP SYNC
O.S.DISP
O.S.REC
MAIN CS
REEL S
REEL T
POWER SW
ALWAYS 5V
GND
UNREG GND
SW.GND
TP3103 GND
IC3101
µPD75306-023-3B9
INITIAL RESET
TEST
TIME ADJ
DATE TIME
ES SW
SCAN IN D
SCAN IN C
SCAN IN B
SCAN IN A
X2
X1
XT2
XT1
VDD
AUTO/MAN
STILL ADJ
ER5/ER7
JAP/US
SCAN OUT A
MOTOR CLK
SCAN OUT B
SCAN OUT C
START/STOP
EDIT
SERIAL REQUEST
REMOTE
SI
EJECT LED
REC LED
REEL S
REEL T
COUNT UP/DOWN
NTSC/PAL
VSS
ES STB
SCAN OUT +
CG STB
MAIN CS
WAKE UP
SCK
SO
TP3102 TEST
R3130 470
D3130 POWER LED
S3101 POWER SW
R3161 1K
S3102 DATE TIME
D3121 RD8.2M
R3160 1K
S3103 TIME ADJ
D3120 RD8.2M
D3101 DCA015 1/2
D3102 DCA015 1/2
S3105 MEMO ON/OFF
R3150 47K
X3102 CSB-1000JB
C3106 220P
C3105 220P
R3110 330K
C3104 33P
S3104 EJECT
S3106 MEMO RES
R3151 47K
TP3105 STILL ADJ
X3101 32.768KHZ
CT3103 25P TZB04Z250B
TP3101 X-TAL ADJ
R3108 15K
R3107 1K
CN3103
START/STOP
GND
R3142 220K
C3142 100P
IC3103 BA7135F
C3140 0.47
TP3104
C3150 1
C3152 100P
C3153 100P
R3102 100K
R3104 1K
R3106 10K *
L3101 330µH
C3110 0.01
R3125 47K
R3124 47K
C3101 10/16
C3102 47/16
D3122 RD8.2M
R3162 10K
C3151 1000P
IC3102 µPD6145G
CS
SCK
STB
S.DATA IN
NC
VDD
CK OUT
OSC OUT
OSC IN
GND
HOLD
HSYNC
VSYNC
TEST IN
NC
VBLK
OS DISP
OS REC
VR
VMON
R3136 22K
R3135 18K
SVR3101 22K
C3136 220P
C3137 1
C3139 0.047
C3138 0.022
R3137 5.6K
R3154 47K
R3155 100K
Q3125 2SC2812
Q3126 2SC2812
C3154 100P
R3105 10K
D3127 DCA015 1/2
R3103 150K
C3143 0.047
R3152 39K
R3156 10K
Q3123 2SC3398
L3102 39µH
C3111 27P
CT3112 25P TZB04Z250B
R3122 22K
C3122 0.47
C3121 0.01
R3123 220K
Q3122 2SC2812
D3123 RD8.2M
Q3121 2SC3395
Q3124 2SC3395
R3131 12K
R3132 10K
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

***a: REC MODE**

[b]: PB MODE

▶ : Indicated current of signal

K

J

I

H

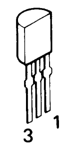
G

F

E

SEMICONDUCTORS

LVC550C
PST529D-2



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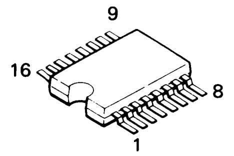

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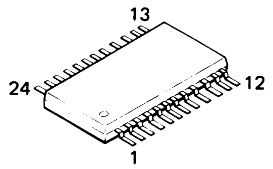
CX20114



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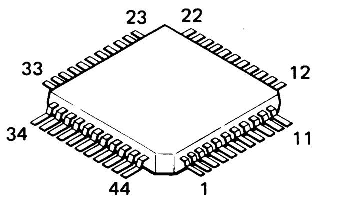
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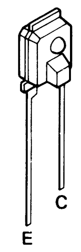
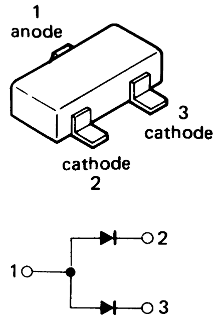
PT480F



DCA015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anode
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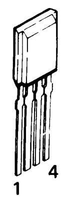
cathode
cathode
2
1
2
3

AN608P



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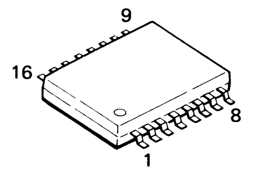

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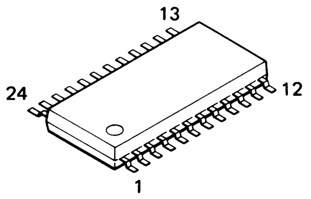

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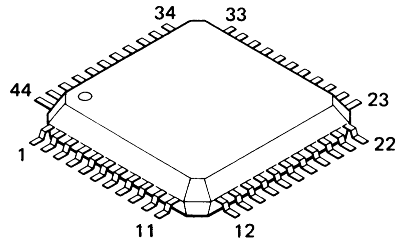
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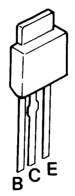

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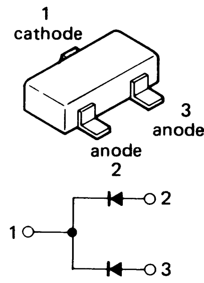
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anode
anode
2
1
2
3

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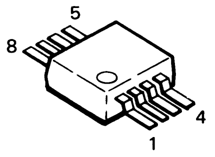
NJM022M



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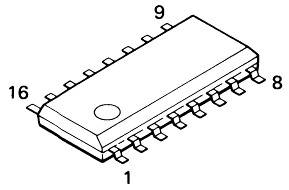

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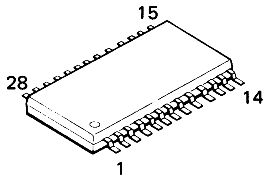

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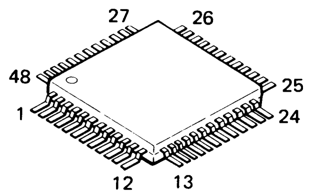
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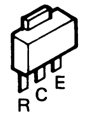
2SA1202
2SA1203



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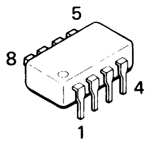

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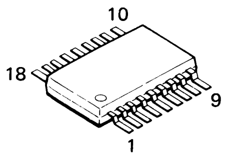

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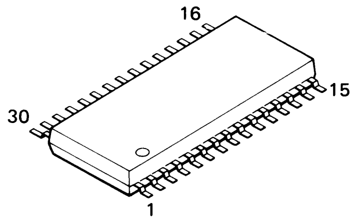

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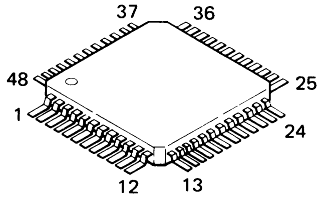
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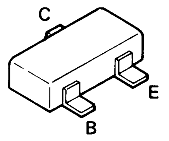

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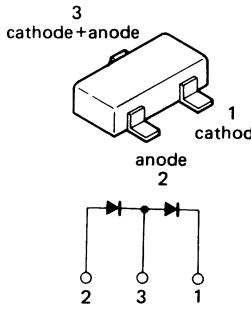
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cathode
anode
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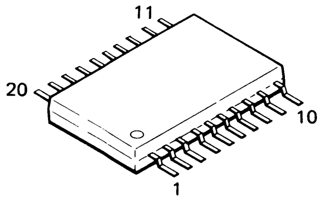

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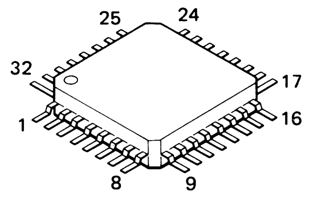
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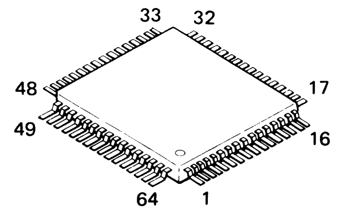
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16
64
1

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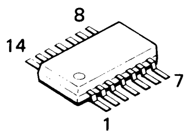

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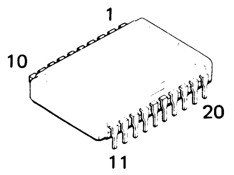

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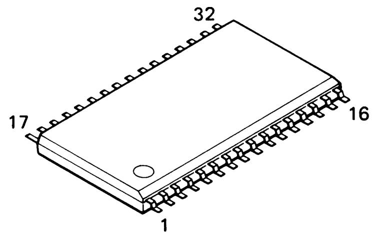

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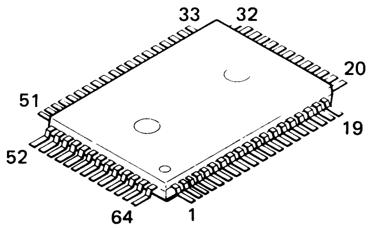
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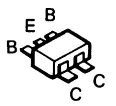
FMW1



RD12M
RD2.4MB
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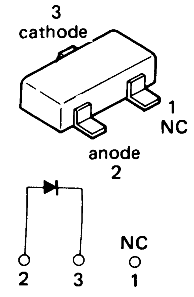
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NC
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3
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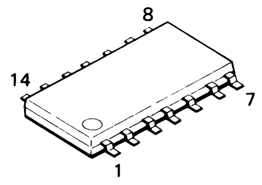

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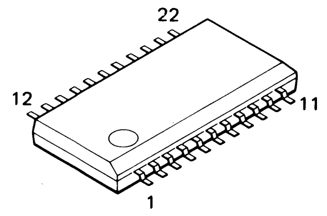

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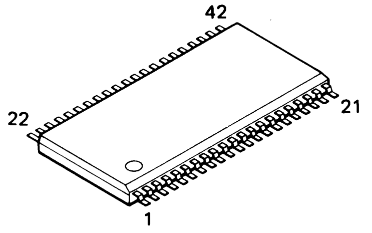

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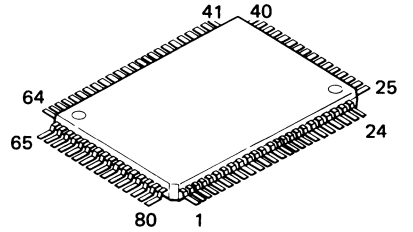
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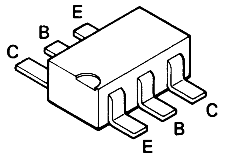
IMZ1



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ORS

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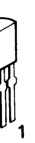
529D-2



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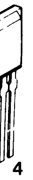

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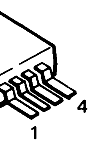
022M



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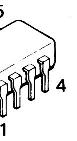
0026M
358M
358M
6984
4560M
25AF
763PF
556MB



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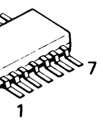

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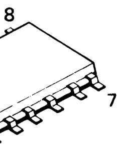

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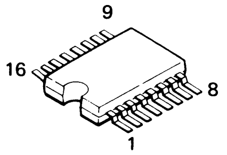

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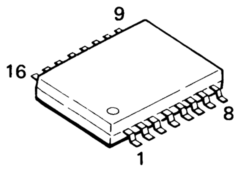

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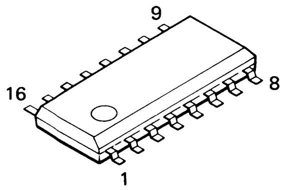

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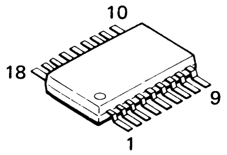

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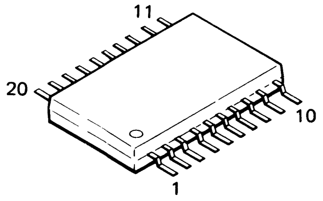

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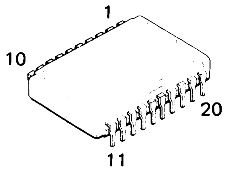

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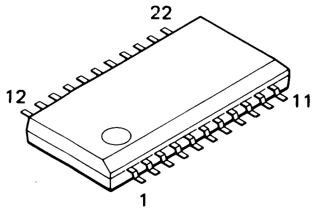

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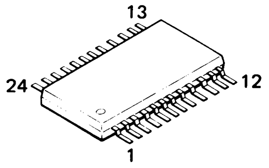

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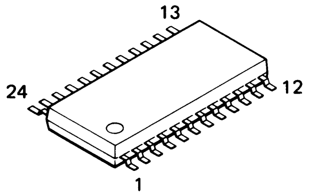

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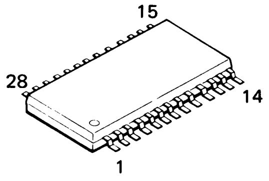

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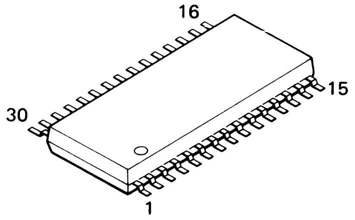

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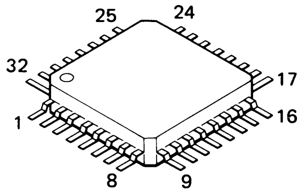
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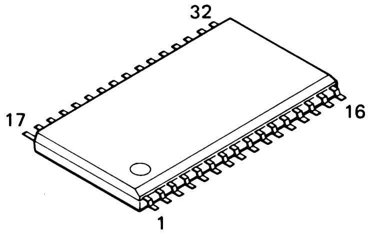
AN2151S



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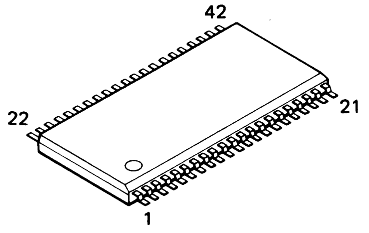
AN2351S



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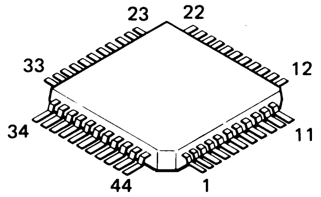
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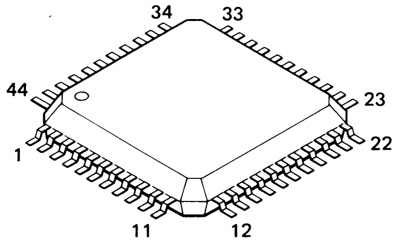
TMP80C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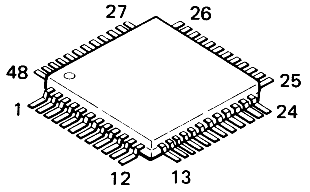
CXD1126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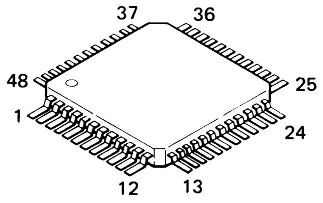
CXA1202Q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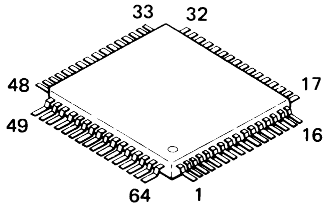
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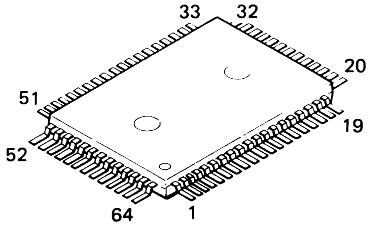
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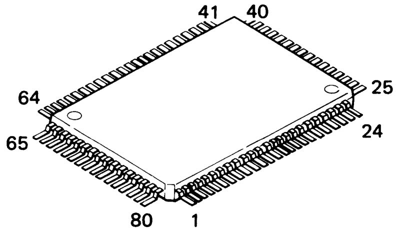
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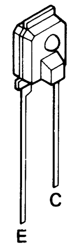

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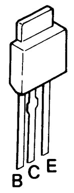

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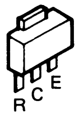

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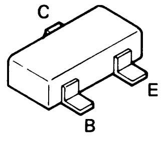

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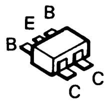

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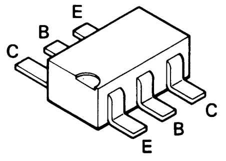

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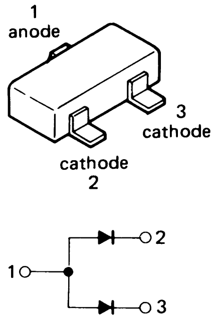
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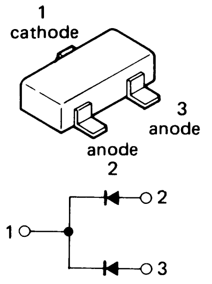
cathode
cathode
2
1
2
3

DC8015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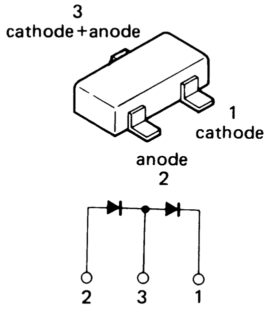
cathode
3
anode
anode
2
1
2
3

MA153
DCC010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cathode+anode
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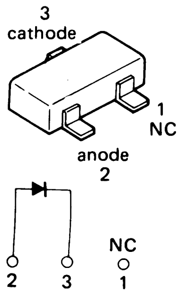
cathode
anode
2
2
3
1

RD12M
RD2.4MB
DS8015
DSA015
E10QS03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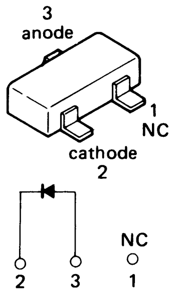
NC
anode
2
NC
2
3
1

RD13M-B1
RD8.2M-B2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anode
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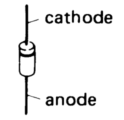
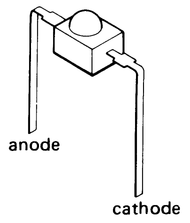
cathode
2
NC
2
3
1

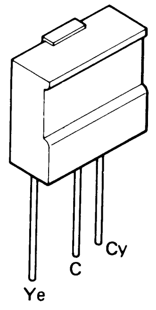
GZA6.2Y


cathode
anode

BR2202S


anode
cathode

AM-3208S



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